

COMPRESSOR DEFINITION

| | |
|---------------------------|-----------------|
| Designation | EM ZL70CLC |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number | 513304153 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|-----------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-600a | | |
| 3 Nominal voltage and frequency | 220-240 / 50 | [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 | 198 to 255 V | - |
| 8.2 LBP (43°C Ambient temperature) | Static | 198 to 255 V | - |
| 8.3 HBP (32°C Ambient temperature) | - | - | - |
| 8.4 HBP (43°C Ambient temperature) | - | - | - |
| 9 Maximum condensing temperature | | | |
| 9.1 Operating | 6.9 | [kgf/cm ²] (98 psig) | / °C - °F |
| 9.2 Peak | 7.8 | [kgf/cm ²] (111 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|----------------|----------------------------------|
| 1 Commercial designation | 1/4 | [hp] |
| 2 Displacement | 11.14 | [cm ³] (0.680 cu.in) |
| 2.1 Bore [mm] | 26.000 | |
| 2.2 Stroke [mm] | 21.000 | |
| 3 Lubricant charge | 150 | [ml] (5.07 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO5 | |
| 4 Weight (with oil charge) | 7.1 | [kg] (15.65 lb.) |
| 5 Nitrogen charge | - | [kgf/cm ²] |

C - ELECTRICAL DATA

| | | |
|--|---|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220-240 V 50 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Combo | |
| 2.1 Starting device | 8EA17E61/8EA17E63/QPS2-C22MD3J6/QPS2-C22MD3J8 | |
| 3 Start capacitor | - | [μF(VAC minimum)] |
| 4 Run capacitor | 5(350) | [μF(VAC minimum)] |
| 5 Motor protection | DRB24P61A2 | |
| 6 Start winding resistance | 23.90 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 20.60 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50 Hz) | 5.80 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz) | 0.91 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz) | 1.08 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | IRAM | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | |
|---------------------------------|----------|-----|-------------------------------|-------------------------------|--|--------------------------------|--|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAELBP32 Static | | Evaporating temperature (Condensing temperature | | -23.3°C (-9.94°F) 54.4°C (129.92°F) | |
| Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| 652 | 164 | 191 | 117 | 0.57 | 2.05 | 5.59 | 1.41 | 1.64 |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|-------|---------------------------------|--------------------|-----|---------------------------------------|----------------------------|-----------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 Static | | (Condensing temperature 35°C (+95°F)) | | | | | |
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 380 | 96 | 111 | 81 | 0.42 | 1.19 | 4.69 | 1.18 | 1.38 |
| -30 | (-22) | 507 | 128 | 148 | 91 | 0.46 | 1.59 | 5.55 | 1.40 | 1.63 |
| -25 | (-13) | 664 | 167 | 195 | 103 | 0.51 | 2.08 | 6.46 | 1.63 | 1.89 |
| -20 | (- 4) | 855 | 215 | 251 | 115 | 0.57 | 2.69 | 7.44 | 1.87 | 2.18 |
| -15 | (+ 5) | 1082 | 273 | 317 | 128 | 0.62 | 3.40 | 8.48 | 2.14 | 2.48 |
| -10 | (+14) | 1347 | 339 | 395 | 141 | 0.68 | 4.25 | 9.58 | 2.41 | 2.81 |

| | | | | | | | | | | |
|-------------------------------|-------|---------------------------------|--------------------|-----|--|----------------------------|-----------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 Static | | (Condensing temperature 45°C (+113°F)) | | | | | |
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 348 | 88 | 102 | 82 | 0.43 | 1.09 | 4.24 | 1.07 | 1.24 |
| -30 | (-22) | 474 | 119 | 139 | 94 | 0.47 | 1.49 | 5.02 | 1.27 | 1.47 |
| -25 | (-13) | 631 | 159 | 185 | 108 | 0.53 | 1.98 | 5.85 | 1.47 | 1.71 |
| -20 | (- 4) | 822 | 207 | 241 | 122 | 0.59 | 2.58 | 6.71 | 1.69 | 1.97 |
| -15 | (+ 5) | 1049 | 264 | 308 | 138 | 0.66 | 3.30 | 7.62 | 1.92 | 2.23 |
| -10 | (+14) | 1316 | 332 | 386 | 154 | 0.73 | 4.15 | 8.56 | 2.16 | 2.51 |

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|-------------------------------|-------|---------------------------------|--------------------|-----|--|----------------------------|-----------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 Static | | (Condensing temperature 55°C (+131°F)) | | | | | |
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 318 | 80 | 93 | 83 | 0.44 | 1.00 | 3.83 | 0.97 | 1.12 |
| -30 | (-22) | 439 | 111 | 129 | 97 | 0.49 | 1.38 | 4.55 | 1.15 | 1.33 |
| -25 | (-13) | 592 | 149 | 173 | 112 | 0.55 | 1.86 | 5.29 | 1.33 | 1.55 |
| -20 | (- 4) | 779 | 196 | 228 | 128 | 0.62 | 2.45 | 6.05 | 1.53 | 1.77 |
| -15 | (+ 5) | 1003 | 253 | 294 | 146 | 0.70 | 3.16 | 6.83 | 1.72 | 2.00 |
| -10 | (+14) | 1266 | 319 | 371 | 166 | 0.78 | 3.99 | 7.63 | 1.92 | 2.24 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Static | | | (Condensing temperature 65°C (+149°F)) | | | | | |
|-------------------------------|-------|---------------------------------|----------|-----|---|----------------------------|--------------------------|--------------------------------|-----------|-------|
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 291 | 73 | 85 | 84 | 0.45 | 0.91 | 3.44 | 0.87 | 1.01 |
| -30 | (-22) | 403 | 101 | 118 | 98 | 0.50 | 1.26 | 4.11 | 1.04 | 1.20 |
| -25 | (-13) | 547 | 138 | 160 | 115 | 0.56 | 1.72 | 4.77 | 1.20 | 1.40 |
| -20 | (- 4) | 726 | 183 | 213 | 134 | 0.64 | 2.28 | 5.44 | 1.37 | 1.59 |
| -15 | (+ 5) | 941 | 237 | 276 | 155 | 0.73 | 2.97 | 6.10 | 1.54 | 1.79 |
| -10 | (+14) | 1197 | 302 | 351 | 177 | 0.83 | 3.78 | 6.76 | 1.70 | 1.98 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|---------------------------------------|------|--------------------------|
| 1 Base plate | European Standard EG/F/AMEM Version 2 | | |
| 2 Tray holder | No | | |
| 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 42° up + 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 | | |