**COMPRESSOR DEFINITION**

| | |
|---|---|
| Designation | **EM R40CLP** |
| Nominal Voltage/Frequency | **115-127 V 60 Hz** |
| Engineering Number | **513400016** |

**A - APPLICATION / LIMIT WORKING CONDITIONS**

| | | | |
|---|---|---|---|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-600a | | |
| 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 | RSIR | | |
| 6 Starting torque | LST - Low Starting Torque | | |
| 7 Expantion device | Capillary tube | | |
| 8 Compressor cooling | | Operating voltage range | |
| | | 50 Hz | 60 Hz |
| 8.1 LBP (32ºC Ambient temperature) | Static | - | 103 to 140 V |
| 8.2 LBP (43ºC Ambient temperature) | Static | - | 103 to 140 V |
| 8.3 HBP (32ºC Ambient temperature) | - | - | - |
| 8.4 HBP (43ºC Ambient temperature) | - | - | - |
| 9 Maximum condensing temperature | | | |
| 9.1 Operating | 6.9 | [kgf/cm²] (98 psig) | / ºC - ºF |
| 9.2 Peak | 7.8 | [kgf/cm²] (111 psig) | / ºC - ºF |
| 10 Maximum winding temperature | 130 | [ °C ] | |

**B - MECHANICAL DATA**

| | | |
|---|---|---|
| 1 Commercial designation | 1/8 | [hp] |
| 2 Displacement | 5.96 | [cm³] (0.364 cu.in) |
| 2.1 Bore [mm] | 22.500 | |
| 2.2 Stroke [mm] | 15.000 | |
| 3 Lubricant charge | 180 | [ml] (6.09 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO5 | |
| 4 Weight (with oil charge) | 6.3 | [kg] (13.89 lb.) |
| 5 Nitrogen charge | - | [kgf/cm²] |

**C - ELECTRICAL 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 | 8EA14C1/QPS2-A4R7MG1 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | 4TM283RFBYY-53 | |
| 6 Start winding resistance | 9.61 | [Ω at 25ºC (77ºF)] +/- 8% |
| 7 Run winding resistance | 11.00 | [Ω at 25ºC (77ºF)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 6.75 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | - | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | - | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CE - IMTRO - TUV - UKCA | |

## 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 (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] |
| 378 | 95 | 111 | 95 | 1.26 | 1.19 | 3.99 | 1.01 | 1.17 |

## E - PERFORMANCE - CURVES

TEST CONDITIONS: **@127V60Hz** — **ASHRAE32** **Static** — (Condensing temperature **35ºC (+95ºF) )**

| 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)** | 243 | 61 | 71 | 69 | 1.18 | 0.76 | 3.51 | 0.89 | 1.03 |
| **-30** | **(-22)** | 313 | 79 | 92 | 78 | 1.21 | 0.98 | 4.04 | 1.02 | 1.19 |
| **-25** | **(-13)** | 401 | 101 | 118 | 85 | 1.23 | 1.26 | 4.72 | 1.19 | 1.38 |
| **-20** | **(- 4)** | 512 | 129 | 150 | 93 | 1.26 | 1.61 | 5.53 | 1.39 | 1.62 |
| **-15** | **(+ 5)** | 650 | 164 | 190 | 101 | 1.29 | 2.05 | 6.42 | 1.62 | 1.88 |
| **-10** | **(+14)** | 819 | 206 | 240 | 110 | 1.33 | 2.58 | 7.39 | 1.86 | 2.17 |

TEST CONDITIONS: **@127V60Hz** — **ASHRAE32** **Static** — (Condensing temperature **45ºC (+113ºF) )**

| 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)** | 210 | 53 | 62 | 72 | 1.18 | 0.66 | 2.94 | 0.74 | 0.86 |
| **-30** | **(-22)** | 283 | 71 | 83 | 81 | 1.21 | 0.89 | 3.49 | 0.88 | 1.02 |
| **-25** | **(-13)** | 374 | 94 | 110 | 90 | 1.24 | 1.17 | 4.17 | 1.05 | 1.22 |
| **-20** | **(- 4)** | 485 | 122 | 142 | 98 | 1.27 | 1.52 | 4.93 | 1.24 | 1.44 |
| **-15** | **(+ 5)** | 622 | 157 | 182 | 108 | 1.31 | 1.96 | 5.76 | 1.45 | 1.69 |
| **-10** | **(+14)** | 788 | 199 | 231 | 119 | 1.37 | 2.49 | 6.62 | 1.67 | 1.94 |

TEST CONDITIONS: **@127V60Hz** — **ASHRAE32** **Static** — (Condensing temperature **55ºC (+131ºF) )**

| 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)** | 183 | 46 | 54 | 71 | 1.18 | 0.57 | 2.59 | 0.65 | 0.76 |
| **-30** | **(-22)** | 257 | 65 | 75 | 81 | 1.21 | 0.81 | 3.14 | 0.79 | 0.92 |
| **-25** | **(-13)** | 346 | 87 | 101 | 91 | 1.24 | 1.09 | 3.78 | 0.95 | 1.11 |
| **-20** | **(- 4)** | 455 | 115 | 133 | 101 | 1.28 | 1.43 | 4.47 | 1.13 | 1.31 |
| **-15** | **(+ 5)** | 587 | 148 | 172 | 113 | 1.33 | 1.85 | 5.20 | 1.31 | 1.52 |
| **-10** | **(+14)** | 747 | 188 | 219 | 126 | 1.40 | 2.36 | 5.93 | 1.49 | 1.74 |

## E - PERFORMANCE - CURVES

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **65ºC (+149ºF) )**
**@127V60Hz** **Static**

| 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)** | 162 | 41 | 47 | 67 | 1.17 | 0.51 | 2.43 | 0.61 | 0.71 |
| **-30** | **(-22)** | 233 | 59 | 68 | 78 | 1.20 | 0.73 | 2.95 | 0.74 | 0.86 |
| **-25** | **(-13)** | 317 | 80 | 93 | 90 | 1.24 | 1.00 | 3.52 | 0.89 | 1.03 |
| **-20** | **(- 4)** | 420 | 106 | 123 | 102 | 1.29 | 1.32 | 4.12 | 1.04 | 1.21 |
| **-15** | **(+ 5)** | 544 | 137 | 159 | 116 | 1.35 | 1.71 | 4.71 | 1.19 | 1.38 |
| **-10** | **(+14)** | 694 | 175 | 203 | 132 | 1.43 | 2.19 | 5.27 | 1.33 | 1.54 |

## F - EXTERNAL CHARACTERISTICS

| | | | |
|---|---|---|---|
| 1 Base plate | New Base Plate EUEM | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 7.84 +0.00/-0.10 | [mm] | (0.309" +0.000"/-0.004") |
| 3.1.1 Material | Copper(OD) | | |
| 3.1.2 Shape | Slanted 40° 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 30° up + 24° to Back | | |
| 3.3 PROCESS | 6.35 +0.08/-0.08 | [mm] | (0.250" +0.003"/-0.003") |
| 3.3.1 Material | Copper(OD) | | |
| 3.3.2 Shape | Slanted 45° up + 45° to Back | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |