

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | EM 2S70CLP      |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number        | 513304564       |

### 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 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 temperature   |                                   |                                   |              |
| 9.1 Operating                      | 6.9                               | [kgf/cm <sup>2</sup> ] (98 psig)  | / °C - °F    |
| 9.2 Peak                           | 7.8                               | [kgf/cm <sup>2</sup> ] (111 psig) | / °C - °F    |
| 10 Maximum winding temperature     | 130                               | [ °C ]                            |              |

### B - MECHANICAL DATA

|                               |                |                                  |
|-------------------------------|----------------|----------------------------------|
| 1 Commercial designation      | 1/5            | [hp]                             |
| 2 Displacement                | 10.61          | [cm <sup>3</sup> ] (0.647 cu.in) |
| 2.1 Bore [mm]                 | 26.000         |                                  |
| 2.2 Stroke [mm]               | 20.000         |                                  |
| 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)    | 7.38           | [kg] (16.27 lb.)                 |
| 5 Nitrogen charge             | -              | [kgf/cm <sup>2</sup> ]           |

### 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                          | 7M4R7MC1/8EA14C1/8M4R7MC1/QPS2-A4R7MG1/QPS2A4R7 |                                    |
| 3 Start capacitor                            | -   | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -   | [µF(VAC minimum)]                  |
| 5 Motor protection                           | DRB48K61A*                                      |                                    |
| 6 Start winding resistance                   | 6.14  | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 3.97  | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 14.00   | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 2.85  | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | 3.29  | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | IMTRO - TUV                                     |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@127V60Hz |          |     | ASHRAELBP32<br>Static          |                                  | Evaporating temperature<br>(Condensing temperature |                           | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity<br>+/- 5%    |          |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5%                         | EFFICIENCY RATE<br>+/- 7% |  |       |
| [Btu/h]                       | [kcal/h] | [W] | [W]                            | [A]                              | [kg/h]   | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |
| 716                           | 180      | 210 | 134                            | 1.72                             | 2.25   | 5.35                      | 1.35                                   | 1.57  |

### E - PERFORMANCE - CURVES

|                               |       |                            |          |     |                                |  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@127V60Hz |       | ASHRAE32<br>Static         |          |     |                                | (Condensing temperature 35°C (+95°F) ) |                            |                           |           |       |
| Evaporating<br>temperature    |       | Cooling capacity<br>+/- 5% |          |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5%       | Gas flow<br>rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                    | [kcal/h] | [W] | [W]                            | [A]                                    | [kg/h]                     | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -35                           | (-31) | 428                        | 108      | 125 | 97                             | 1.48                                   | 1.34                       | 4.41                      | 1.11      | 1.29  |
| -30                           | (-22) | 581                        | 147      | 170 | 110                            | 1.53                                   | 1.82                       | 5.29                      | 1.33      | 1.55  |
| -25                           | (-13) | 724                        | 182      | 212 | 117                            | 1.59                                   | 2.27                       | 6.23                      | 1.57      | 1.82  |
| -20                           | (- 4) | 908                        | 229      | 266 | 127                            | 1.66                                   | 2.85                       | 7.14                      | 1.80      | 2.09  |
| -15                           | (+ 5) | 1188                       | 299      | 348 | 147                            | 1.73                                   | 3.74                       | 7.96                      | 2.01      | 2.33  |
| -10                           | (+14) | 1616                       | 407      | 474 | 186                            | 1.80                                   | 5.10                       | 8.61                      | 2.17      | 2.52  |

|                               |       |                            |          |     |                                |   |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|---|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@127V60Hz |       | ASHRAE32<br>Static         |          |     |                                | (Condensing temperature 45°C (+113°F) ) |                            |                           |           |       |
| Evaporating<br>temperature    |       | Cooling capacity<br>+/- 5% |          |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5%        | Gas flow<br>rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                    | [kcal/h] | [W] | [W]                            | [A]                                     | [kg/h]                     | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -35                           | (-31) | 416                        | 105      | 122 | 96                             | 1.50                                    | 1.30                       | 4.30                      | 1.08      | 1.26  |
| -30                           | (-22) | 568                        | 143      | 166 | 113                            | 1.56                                    | 1.78                       | 4.97                      | 1.25      | 1.46  |
| -25                           | (-13) | 703                        | 177      | 206 | 123                            | 1.64                                    | 2.21                       | 5.73                      | 1.44      | 1.68  |
| -20                           | (- 4) | 875                        | 220      | 256 | 136                            | 1.72                                    | 2.75                       | 6.50                      | 1.64      | 1.91  |
| -15                           | (+ 5) | 1137                       | 286      | 333 | 158                            | 1.81                                    | 3.58                       | 7.22                      | 1.82      | 2.12  |
| -10                           | (+14) | 1541                       | 388      | 452 | 197                            | 1.88                                    | 4.86                       | 7.79                      | 1.96      | 2.28  |

|                               |       |                            |          |     |                                |   |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|---|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@127V60Hz |       | ASHRAE32<br>Static         |          |     |                                | (Condensing temperature 55°C (+131°F) ) |                            |                           |           |       |
| Evaporating<br>temperature    |       | Cooling capacity<br>+/- 5% |          |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5%        | Gas flow<br>rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                    | [kcal/h] | [W] | [W]                            | [A]                                     | [kg/h]                     | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -35                           | (-31) | 391                        | 98       | 114 | 97                             | 1.50                                    | 1.22                       | 4.03                      | 1.02      | 1.18  |
| -30                           | (-22) | 543                        | 137      | 159 | 117                            | 1.59                                    | 1.70                       | 4.54                      | 1.14      | 1.33  |
| -25                           | (-13) | 673                        | 170      | 197 | 130                            | 1.68                                    | 2.11                       | 5.19                      | 1.31      | 1.52  |
| -20                           | (- 4) | 835                        | 211      | 245 | 144                            | 1.77                                    | 2.62                       | 5.88                      | 1.48      | 1.72  |
| -15                           | (+ 5) | 1082                       | 273      | 317 | 167                            | 1.86                                    | 3.41                       | 6.54                      | 1.65      | 1.92  |
| -10                           | (+14) | 1466                       | 369      | 430 | 206                            | 1.94                                    | 4.63                       | 7.11                      | 1.79      | 2.08  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@127V60Hz |       | ASHRAE32<br>Static         |          |     | (Condensing temperature 65°C (+149°F) ) |                               |                         |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|---|-------------------------------|-------------------------|---------------------------|-----------|-------|
| Evaporating temperature       |       | Cooling capacity<br>+/- 5% |          |     | Power consumption<br>+/- 5%             | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                    | [kcal/h] | [W] | [W]                                     | [A]                           | [kg/h]                  | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -35                           | (-31) | 351                        | 88       | 103 | 99                                      | 1.49                          | 1.10                    | 3.59                      | 0.91      | 1.05  |
| -30                           | (-22) | 506                        | 128      | 148 | 121                                     | 1.59                          | 1.59                    | 4.01                      | 1.01      | 1.18  |
| -25                           | (-13) | 635                        | 160      | 186 | 136                                     | 1.70                          | 1.99                    | 4.59                      | 1.16      | 1.34  |
| -20                           | (- 4) | 790                        | 199      | 231 | 151                                     | 1.80                          | 2.48                    | 5.25                      | 1.32      | 1.54  |
| -15                           | (+ 5) | 1024                       | 258      | 300 | 174                                     | 1.89                          | 3.22                    | 5.93                      | 1.49      | 1.74  |
| -10                           | (+14) | 1390                       | 350      | 407 | 214                                     | 1.97                          | 4.39                    | 6.53                      | 1.65      | 1.91  |

### F - EXTERNAL CHARACTERISTICS

|                         |                                       |      |                          |
|-------------------------|---------------------------------------|------|--------------------------|
| 1 Base plate            | European Standard EG/F/AMEM Version 2 |      |                          |
| 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 48° 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 43° up + 45° to Back          |      |                          |
| 3.4 Oil cooler (Copper) | No                                    | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                          |      |                          |