

### COMPRESSOR DEFINITION

|                           |             |
|---------------------------|-------------|
| Designation               | EM 2S70CLP  |
| Nominal Voltage/Frequency | 220 V 60 Hz |
| Engineering Number        | 513304585   |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                   |                                   |              |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type                             | Hermetic reciprocating compressor |                                   |              |
| 2 Refrigerant                      | R-600a                            |                                   |              |
| 3 Nominal voltage and frequency    | 220 / 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                            | -                                 | 198 to 242 V |
| 8.2 LBP (43°C Ambient temperature) | Static                            | -                                 | 198 to 242 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)    | 8.6            | [kg] (18.96 lb.)                 |
| 5 Nitrogen charge             | -              | [kgf/cm <sup>2</sup> ]           |

### C - ELETRICAL DATA

|  |  |                                    |
|--|--|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220 V 60 Hz 1 ~ (Single phase)               |                                    |
| 2 Starting device type                       | PTC  |                                    |
| 2.1 Starting device                          | 8EA17C1/8EA17E61/QPS2-A22MG1/QPS2-A22MG1 092 |                                    |
| 3 Start capacitor                            | -  | [μF(VAC minimum)]                  |
| 4 Run capacitor                              | -  | [μF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM283NFBYY-53                               |                                    |
| 6 Start winding resistance                   | 20.00  | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 13.00  | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 8.80   | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 1.83   | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | 2.11   | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | CE - IMTRO - TUV - UKCA                      |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                             |                               |  |                           |  |       |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@220V60Hz |          |     | 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 consumption<br>+/- 5% | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5%                            | EFFICIENCY RATE<br>+/- 7% |  |       |
| [Btu/h]                       | [kcal/h] | [W] | [W]                         | [A]                           | [kg/h]   | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |
| 725                           | 183      | 212 | 137                         | 1.01                          | 2.28   | 5.31                      | 1.34                                   | 1.56  |

### E - PERFORMANCE - CURVES

|                               |                            |                    |     |                             |                               |                                       |                           |           |       |
|-------------------------------|----------------------------|--------------------|-----|-----------------------------|-------------------------------|---------------------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V60Hz |                            | ASHRAE32<br>Static |     |                             |                               | (Condensing temperature 35°C (+95°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)                     | 414                        | 104                | 121 | 92                          | 0.92                          | 1.30                                  | 4.49                      | 1.13      | 1.32  |
| -30 (-22)                     | 560                        | 141                | 164 | 104                         | 0.93                          | 1.75                                  | 5.37                      | 1.35      | 1.57  |
| -25 (-13)                     | 722                        | 182                | 212 | 116                         | 0.97                          | 2.27                                  | 6.20                      | 1.56      | 1.82  |
| -20 (- 4)                     | 925                        | 233                | 271 | 131                         | 1.02                          | 2.91                                  | 7.08                      | 1.78      | 2.08  |
| -15 (+ 5)                     | 1193                       | 301                | 350 | 147                         | 1.07                          | 3.75                                  | 8.09                      | 2.04      | 2.37  |
| -10 (+14)                     | 1549                       | 390                | 454 | 166                         | 1.11                          | 4.89                                  | 9.32                      | 2.35      | 2.73  |

|                               |                            |                    |     |                             |                               |  |                           |           |       |
|-------------------------------|----------------------------|--------------------|-----|-----------------------------|-------------------------------|--|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V60Hz |                            | ASHRAE32<br>Static |     |                             |                               | (Condensing temperature 45°C (+113°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)                     | 401                        | 101                | 118 | 96                          | 0.92                          | 1.26                                   | 4.18                      | 1.05      | 1.22  |
| -30 (-22)                     | 542                        | 137                | 159 | 109                         | 0.94                          | 1.70                                   | 4.94                      | 1.25      | 1.45  |
| -25 (-13)                     | 695                        | 175                | 204 | 123                         | 0.98                          | 2.18                                   | 5.65                      | 1.42      | 1.66  |
| -20 (- 4)                     | 885                        | 223                | 259 | 139                         | 1.03                          | 2.78                                   | 6.40                      | 1.61      | 1.88  |
| -15 (+ 5)                     | 1135                       | 286                | 333 | 156                         | 1.08                          | 3.57                                   | 7.27                      | 1.83      | 2.13  |
| -10 (+14)                     | 1469                       | 370                | 431 | 175                         | 1.13                          | 4.64                                   | 8.34                      | 2.10      | 2.45  |

|                               |                            |                    |     |                             |                               |  |                           |           |       |
|-------------------------------|----------------------------|--------------------|-----|-----------------------------|-------------------------------|--|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V60Hz |                            | ASHRAE32<br>Static |     |                             |                               | (Condensing temperature 55°C (+131°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)                     | 377                        | 95                 | 110 | 97                          | 0.93                          | 1.18                                   | 3.86                      | 0.97      | 1.13  |
| -30 (-22)                     | 517                        | 130                | 151 | 113                         | 0.95                          | 1.62                                   | 4.54                      | 1.14      | 1.33  |
| -25 (-13)                     | 665                        | 168                | 195 | 129                         | 0.99                          | 2.09                                   | 5.16                      | 1.30      | 1.51  |
| -20 (- 4)                     | 846                        | 213                | 248 | 146                         | 1.05                          | 2.66                                   | 5.81                      | 1.46      | 1.70  |
| -15 (+ 5)                     | 1083                       | 273                | 317 | 165                         | 1.11                          | 3.41                                   | 6.56                      | 1.65      | 1.92  |
| -10 (+14)                     | 1401                       | 353                | 411 | 186                         | 1.16                          | 4.42                                   | 7.52                      | 1.89      | 2.20  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V60Hz |       | 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) | 340                        | 86       | 100 | 97                                      | 0.94                          | 1.07                    | 3.52                      | 0.89      | 1.03  |
| -30                           | (-22) | 484                        | 122      | 142 | 115                                     | 0.96                          | 1.52                    | 4.14                      | 1.04      | 1.21  |
| -25                           | (-13) | 632                        | 159      | 185 | 134                                     | 1.01                          | 1.98                    | 4.70                      | 1.18      | 1.38  |
| -20                           | (- 4) | 809                        | 204      | 237 | 154                                     | 1.07                          | 2.54                    | 5.28                      | 1.33      | 1.55  |
| -15                           | (+ 5) | 1038                       | 262      | 304 | 174                                     | 1.14                          | 3.27                    | 5.95                      | 1.50      | 1.74  |
| -10                           | (+14) | 1344                       | 339      | 394 | 196                                     | 1.19                          | 4.24                    | 6.82                      | 1.72      | 2.00  |

### 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 parallel BP+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                          |      |                          |