

### COMPRESSOR DEFINITION

|                           |             |
|---------------------------|-------------|
| Designation               | EM 2S70CLC  |
| Nominal Voltage/Frequency | 220 V 60 Hz |
| Engineering Number        | 513304579   |

### 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                       | 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 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)    | 7.3            | [kg] (16.09 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                          | 8EA17C3/QPS2-A22MD3/QPS2-A22MD3 091 |                                    |
| 3 Start capacitor                            | -                                   | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 5(315)                              | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM283KFBYY-53                      |                                    |
| 6 Start winding resistance                   | 18.33                               | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 11.72                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 9.60                                | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 1.67                                | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | 1.97                                | [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<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] |
| 736                           | 185      | 216 | 132                            | 0.71                             | 2.31                                               | 5.57                      | 1.40                                   | 1.63  |

### E - PERFORMANCE - CURVES

|                               |       |                            |          |     |                                |                                        |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|----------------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V60Hz |       | 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) | 400                        | 101      | 117 | 92                             | 0.58                                   | 1.25                       | 4.34                      | 1.09      | 1.27  |
| -30                           | (-22) | 531                        | 134      | 156 | 103                            | 0.61                                   | 1.66                       | 5.17                      | 1.30      | 1.51  |
| -25                           | (-13) | 687                        | 173      | 201 | 114                            | 0.65                                   | 2.16                       | 6.05                      | 1.52      | 1.77  |
| -20                           | (- 4) | 880                        | 222      | 258 | 126                            | 0.69                                   | 2.76                       | 7.01                      | 1.77      | 2.05  |
| -15                           | (+ 5) | 1120                       | 282      | 328 | 139                            | 0.74                                   | 3.52                       | 8.07                      | 2.03      | 2.36  |
| -10                           | (+14) | 1417                       | 357      | 415 | 153                            | 0.80                                   | 4.47                       | 9.26                      | 2.33      | 2.71  |

|                               |       |                            |          |     |                                |                                         |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|-----------------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V60Hz |       | 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) | 396                        | 100      | 116 | 93                             | 0.57                                    | 1.24                       | 4.26                      | 1.07      | 1.25  |
| -30                           | (-22) | 523                        | 132      | 153 | 106                            | 0.62                                    | 1.64                       | 4.92                      | 1.24      | 1.44  |
| -25                           | (-13) | 673                        | 170      | 197 | 120                            | 0.67                                    | 2.11                       | 5.62                      | 1.42      | 1.65  |
| -20                           | (- 4) | 856                        | 216      | 251 | 134                            | 0.72                                    | 2.69                       | 6.40                      | 1.61      | 1.87  |
| -15                           | (+ 5) | 1084                       | 273      | 318 | 149                            | 0.78                                    | 3.41                       | 7.27                      | 1.83      | 2.13  |
| -10                           | (+14) | 1367                       | 345      | 401 | 165                            | 0.85                                    | 4.31                       | 8.27                      | 2.08      | 2.42  |

|                               |       |                            |          |     |                                |                                         |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|-----------------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V60Hz |       | 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) | 392                        | 99       | 115 | 91                             | 0.57                                    | 1.23                       | 4.30                      | 1.08      | 1.26  |
| -30                           | (-22) | 515                        | 130      | 151 | 107                            | 0.63                                    | 1.62                       | 4.79                      | 1.21      | 1.40  |
| -25                           | (-13) | 659                        | 166      | 193 | 124                            | 0.69                                    | 2.07                       | 5.33                      | 1.34      | 1.56  |
| -20                           | (- 4) | 834                        | 210      | 245 | 140                            | 0.75                                    | 2.62                       | 5.95                      | 1.50      | 1.74  |
| -15                           | (+ 5) | 1051                       | 265      | 308 | 158                            | 0.82                                    | 3.31                       | 6.66                      | 1.68      | 1.95  |
| -10                           | (+14) | 1320                       | 333      | 387 | 177                            | 0.90                                    | 4.17                       | 7.49                      | 1.89      | 2.19  |

### 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) | 362                        | 91       | 106 | 87                                      | 0.56                          | 1.13                    | 4.18                      | 1.05      | 1.22  |
| -30                           | (-22) | 483                        | 122      | 142 | 106                                     | 0.63                          | 1.51                    | 4.54                      | 1.14      | 1.33  |
| -25                           | (-13) | 622                        | 157      | 182 | 126                                     | 0.70                          | 1.95                    | 4.94                      | 1.24      | 1.45  |
| -20                           | (- 4) | 789                        | 199      | 231 | 146                                     | 0.78                          | 2.48                    | 5.41                      | 1.36      | 1.59  |
| -15                           | (+ 5) | 995                        | 251      | 292 | 166                                     | 0.86                          | 3.13                    | 5.97                      | 1.50      | 1.75  |
| -10                           | (+14) | 1251                       | 315      | 367 | 188                                     | 0.95                          | 3.95                    | 6.64                      | 1.67      | 1.95  |

### 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                          |      |                          |