

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | EM 2C70CLT      |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number        | 513304522       |

### 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 pressures/temperature |                                   |                                   |           |
| 9.1 Operating (gauge)                      | 7.7                               | [kgf/cm <sup>2</sup> ] (109 psig) | / °C - °F |
| 9.2 Peak (gauge)                           | 9.8                               | [kgf/cm <sup>2</sup> ] (139 psig) | / °C - °F |
| 10 Maximum winding temperature             | 130                               | [ °C ]                            |           |

### B - MECHANICAL DATA

|                               |                |                                  |
|-------------------------------|----------------|----------------------------------|
| 1 Commercial designation      |                | [hp]                             |
| 2 Displacement                | 11.14          | [cm <sup>3</sup> ] (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 | MINERAL / ISO5 |                                  |
| 4 Weight (with oil charge)    | 8.36           | [kg] (18.43 lb.)                 |
| 5 Nitrogen charge             | -              | [kgf/cm <sup>2</sup> ]           |

### C - ELETRICAL DATA

|  |                                    |                                    |
|--|------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220-240 V 50 Hz 1 ~ (Single phase) |                                    |
| 2 Starting device type                       | TSD                                |                                    |
| 2.1 Starting device                          | TSD-220V                           |                                    |
| 3 Start capacitor                            | -                                  | [μF(VAC minimum)]                  |
| 4 Run capacitor                              | 5(300)                             | [μF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM232KFBYY-53                     |                                    |
| 6 Start winding resistance                   | 14.50                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 19.05                              | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50 Hz)        | 4.80                               | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz)     | 0.75                               | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz)      | -                                  | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | VDE                                |                                    |

### D - PERFORMANCE - CHECK POINT DATA

| TEST CONDITIONS:<br>@220V50Hz |          |     | CECOMAFLBP-NOFAN<br>Static     |                                  | Evaporating temperature<br>(Condensing temperature |                           | -25°C (-13°F)<br>55°C (131°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] |
| 482                           | 121      | 141 | 98                             | 0.45                             | 1.84   | 4.91                      | 1.24                           | 1.44  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V50Hz |       |                            | CECOMAF-NOFAN<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) | 364                        | 92                      | 107 | 69                                    | 0.35                             | 1.16                       | 5.24                      | 1.32      | 1.54  |
| -30                           | (-22) | 484                        | 122                     | 142 | 80                                    | 0.39                             | 1.55                       | 6.06                      | 1.53      | 1.77  |
| -25                           | (-13) | 634                        | 160                     | 186 | 91                                    | 0.44                             | 2.04                       | 6.96                      | 1.75      | 2.04  |
| -20                           | (- 4) | 817                        | 206                     | 239 | 103                                   | 0.49                             | 2.63                       | 7.93                      | 2.00      | 2.32  |
| -15                           | (+ 5) | 1033                       | 260                     | 303 | 115                                   | 0.54                             | 3.32                       | 8.95                      | 2.26      | 2.62  |
| -10                           | (+14) | 1282                       | 323                     | 376 | 128                                   | 0.60                             | 4.14                       | 9.99                      | 2.52      | 2.93  |

| TEST CONDITIONS:<br>@220V50Hz |       |                            | CECOMAF-NOFAN<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) | 319                        | 80                      | 93  | 70                                     | 0.36                             | 1.11                       | 4.55                      | 1.15      | 1.33  |
| -30                           | (-22) | 424                        | 107                     | 124 | 82                                     | 0.41                             | 1.48                       | 5.17                      | 1.30      | 1.52  |
| -25                           | (-13) | 558                        | 141                     | 164 | 95                                     | 0.46                             | 1.94                       | 5.87                      | 1.48      | 1.72  |
| -20                           | (- 4) | 721                        | 182                     | 211 | 109                                    | 0.52                             | 2.51                       | 6.62                      | 1.67      | 1.94  |
| -15                           | (+ 5) | 914                        | 230                     | 268 | 123                                    | 0.58                             | 3.19                       | 7.41                      | 1.87      | 2.17  |
| -10                           | (+14) | 1138                       | 287                     | 333 | 139                                    | 0.65                             | 3.98                       | 8.20                      | 2.07      | 2.40  |

| TEST CONDITIONS:<br>@220V50Hz |       |                            | CECOMAF-NOFAN<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) | 270                        | 68                      | 79  | 70                                     | 0.36                             | 1.03                       | 3.87                      | 0.98      | 1.14  |
| -30                           | (-22) | 363                        | 91                      | 106 | 83                                     | 0.42                             | 1.38                       | 4.35                      | 1.10      | 1.28  |
| -25                           | (-13) | 481                        | 121                     | 141 | 98                                     | 0.48                             | 1.83                       | 4.90                      | 1.23      | 1.43  |
| -20                           | (- 4) | 625                        | 158                     | 183 | 114                                    | 0.54                             | 2.39                       | 5.48                      | 1.38      | 1.61  |
| -15                           | (+ 5) | 797                        | 201                     | 234 | 131                                    | 0.61                             | 3.05                       | 6.08                      | 1.53      | 1.78  |
| -10                           | (+14) | 997                        | 251                     | 292 | 150                                    | 0.69                             | 3.83                       | 6.68                      | 1.68      | 1.96  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V50Hz |       | CECOMAF-NOFAN<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) | 217                        | 55       | 64  | 67                                     | 0.35                          | 0.92                    | 3.22                      | 0.81      | 0.94  |
| -30                           | (-22) | 299                        | 75       | 88  | 83                                     | 0.42                          | 1.26                    | 3.61                      | 0.91      | 1.06  |
| -25                           | (-13) | 403                        | 102      | 118 | 100                                    | 0.49                          | 1.70                    | 4.04                      | 1.02      | 1.18  |
| -20                           | (- 4) | 531                        | 134      | 156 | 118                                    | 0.56                          | 2.25                    | 4.50                      | 1.13      | 1.32  |
| -15                           | (+ 5) | 683                        | 172      | 200 | 138                                    | 0.64                          | 2.90                    | 4.97                      | 1.25      | 1.46  |
| -10                           | (+14) | 861                        | 217      | 252 | 160                                    | 0.72                          | 3.67                    | 5.41                      | 1.36      | 1.59  |

### F - EXTERNAL CHARACTERISTICS

|                         |                                |      |                          |
|-------------------------|--------------------------------|------|--------------------------|
| 1 Base plate            | European Standard EUEM         |      |                          |
| 2 Tray holder           | Yes                            |      |                          |
| 3 Connectors            |                                |      |                          |
| 3.1 SUCTION             | 6.1 +0.10/+0.00                | [mm] | (0.240" +0.004"/+0.000") |
| 3.1.1 Material          | Copper                         |      |                          |
| 3.1.2 Shape             | Slanted 42° up + 45° to Back   |      |                          |
| 3.2 DISCHARGE           | 5.1 +0.10/+0.00                | [mm] | (0.201" +0.004"/+0.000") |
| 3.2.1 Material          | Copper                         |      |                          |
| 3.2.2 Shape             | Slanted parallel BP+24°to Back |      |                          |
| 3.3 PROCESS             | 6 +0.08/-0.08                  | [mm] | (0.236" +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                   |      |                          |