

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | EM C20CLT       |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number        | 701IA90         |

### 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                            | 187 to 255 V                      | -         |
| 8.2 LBP (43°C Ambient temperature) | Static                            | 187 to 255 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      | 1/12           | [hp]                             |
| 2 Displacement                | 3.97           | [cm <sup>3</sup> ] (0.242 cu.in) |
| 2.1 Bore [mm]                 | 19.000         |                                  |
| 2.2 Stroke [mm]               | 14.000         |                                  |
| 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)    | 7.6            | [kg] (16.75 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                          | MI.E-START 2021                    |                                    |
| 3 Start capacitor                            | -                                  | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 2.5(350)/2(350)                    | [µF(VAC minimum)]                  |
| 5 Motor protection                           | AE23AHNX                           |                                    |
| 6 Start winding resistance                   | 27.00                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 64.50                              | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50 Hz)        | 2.32                               | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz)     | 0.29                               | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz)      | 0.35                               | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | VDE                                |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                             |                               |  |                           |  |       |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@220V50Hz |          |     | ASHRAE LBP-NOFAN<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] |
| 215                           | 54       | 63  | 36                          | 0.18                          | 0.68   | 5.97                      | 1.50                                   | 1.75  |

### E - PERFORMANCE - CURVES

|                               |                            |                          |     |                             |                               |                                       |                           |           |       |
|-------------------------------|----------------------------|--------------------------|-----|-----------------------------|-------------------------------|---------------------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |                            | ASHRAE32-NOFAN<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)                     | 134                        | 34                       | 39  | 26                          | 0.12                          | 0.42                                  | 5.17                      | 1.30      | 1.51  |
| -30 (-22)                     | 182                        | 46                       | 53  | 29                          | 0.14                          | 0.57                                  | 6.15                      | 1.55      | 1.80  |
| -25 (-13)                     | 235                        | 59                       | 69  | 33                          | 0.16                          | 0.74                                  | 7.06                      | 1.78      | 2.07  |
| -20 (- 4)                     | 297                        | 75                       | 87  | 37                          | 0.18                          | 0.93                                  | 8.01                      | 2.02      | 2.35  |
| -15 (+ 5)                     | 371                        | 93                       | 109 | 41                          | 0.19                          | 1.17                                  | 9.09                      | 2.29      | 2.66  |
| -10 (+14)                     | 460                        | 116                      | 135 | 44                          | 0.21                          | 1.45                                  | 10.40                     | 2.62      | 3.05  |

|                               |                            |                          |     |                             |                               |  |                           |           |       |
|-------------------------------|----------------------------|--------------------------|-----|-----------------------------|-------------------------------|--|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |                            | ASHRAE32-NOFAN<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)                     | 111                        | 28                       | 32  | 26                          | 0.12                          | 0.35                                   | 4.37                      | 1.10      | 1.28  |
| -30 (-22)                     | 160                        | 40                       | 47  | 30                          | 0.14                          | 0.50                                   | 5.41                      | 1.36      | 1.58  |
| -25 (-13)                     | 214                        | 54                       | 63  | 34                          | 0.16                          | 0.67                                   | 6.31                      | 1.59      | 1.85  |
| -20 (- 4)                     | 277                        | 70                       | 81  | 39                          | 0.19                          | 0.87                                   | 7.17                      | 1.81      | 2.10  |
| -15 (+ 5)                     | 352                        | 89                       | 103 | 43                          | 0.21                          | 1.11                                   | 8.08                      | 2.04      | 2.37  |
| -10 (+14)                     | 442                        | 111                      | 130 | 48                          | 0.23                          | 1.40                                   | 9.16                      | 2.31      | 2.68  |

|                               |                            |                          |     |                             |                               |  |                           |           |       |
|-------------------------------|----------------------------|--------------------------|-----|-----------------------------|-------------------------------|--|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |                            | ASHRAE32-NOFAN<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)                     | 92                         | 23                       | 27  | 25                          | 0.11                          | 0.29                                   | 3.67                      | 0.92      | 1.07  |
| -30 (-22)                     | 141                        | 35                       | 41  | 29                          | 0.14                          | 0.44                                   | 4.77                      | 1.20      | 1.40  |
| -25 (-13)                     | 195                        | 49                       | 57  | 34                          | 0.17                          | 0.61                                   | 5.66                      | 1.43      | 1.66  |
| -20 (- 4)                     | 258                        | 65                       | 76  | 40                          | 0.19                          | 0.81                                   | 6.44                      | 1.62      | 1.89  |
| -15 (+ 5)                     | 333                        | 84                       | 98  | 46                          | 0.22                          | 1.05                                   | 7.20                      | 1.82      | 2.11  |
| -10 (+14)                     | 423                        | 107                      | 124 | 52                          | 0.25                          | 1.34                                   | 8.05                      | 2.03      | 2.36  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V50Hz |       | ASHRAE32-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) | 68                         | 17       | 20  | 23                                      | 0.10                          | 0.21                    | 2.95                      | 0.74      | 0.86  |
| -30                           | (-22) | 115                        | 29       | 34  | 28                                      | 0.13                          | 0.36                    | 4.12                      | 1.04      | 1.21  |
| -25                           | (-13) | 167                        | 42       | 49  | 34                                      | 0.16                          | 0.53                    | 5.01                      | 1.26      | 1.47  |
| -20                           | (- 4) | 229                        | 58       | 67  | 40                                      | 0.20                          | 0.72                    | 5.71                      | 1.44      | 1.67  |
| -15                           | (+ 5) | 302                        | 76       | 89  | 48                                      | 0.23                          | 0.95                    | 6.33                      | 1.60      | 1.86  |
| -10                           | (+14) | 391                        | 99       | 115 | 56                                      | 0.26                          | 1.23                    | 6.96                      | 1.75      | 2.04  |

### F - EXTERNAL CHARACTERISTICS

|                         |                              |      |                          |
|-------------------------|------------------------------|------|--------------------------|
| 1 Base plate            | European Standard            |      |                          |
| 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           | 4.94 +0.08/-0.08             | [mm] | (0.194" +0.003"/-0.003") |
| 3.2.1 Material          | Copper                       |      |                          |
| 3.2.2 Shape             | Slanted 0° up + 45° 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                 |      |                          |