

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | EM U40CLP       |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number        | 513306143       |

### 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                       | 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                            | -                                 | 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      | 1/8            | [hp]                             |
| 2 Displacement                | 5.96           | [cm <sup>3</sup> ] (0.364 cu.in) |
| 2.1 Bore [mm]                 | 22.500         |                                  |
| 2.2 Stroke [mm]               | 15.000         |                                  |
| 3 Lubricant charge            | 180            | [ml] (6.09 fl.oz.)               |
| 3.1 Lubricants approved       |                |                                  |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO5 |                                  |
| 4 Weight (with oil charge)    | 6.55           | [kg] (14.44 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                          | 7M4R7MD3/8EA14C3/QPS2-A4R7MD3      |                                    |
| 3 Start capacitor                            | -                                  | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 15(200)                            | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM283RFBYY-53                     |                                    |
| 6 Start winding resistance                   | 6.90                               | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 9.24                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 7.33                               | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 1.47                               | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | 1.53                               | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | TUV - UL                           |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@127V60Hz |          |     | <b>ASHRAELBP32</b><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] |
| 397                           | 100      | 116 | 87                             | 0.77                             | 1.25   | 4.54                      | 1.14                                   | 1.33  |

### E - PERFORMANCE - CURVES

|                               |       |                            |          |     |                                |  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@127V60Hz |       | <b>ASHRAE32</b><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) | 241                        | 61       | 71  | 60                             | 0.56                                   | 0.75                       | 4.03                      | 1.02      | 1.18  |
| -30                           | (-22) | 319                        | 80       | 93  | 68                             | 0.63                                   | 1.00                       | 4.71                      | 1.19      | 1.38  |
| -25                           | (-13) | 408                        | 103      | 120 | 74                             | 0.69                                   | 1.28                       | 5.52                      | 1.39      | 1.62  |
| -20                           | (- 4) | 518                        | 131      | 152 | 80                             | 0.74                                   | 1.63                       | 6.46                      | 1.63      | 1.89  |
| -15                           | (+ 5) | 656                        | 165      | 192 | 86                             | 0.79                                   | 2.06                       | 7.54                      | 1.90      | 2.21  |
| -10                           | (+14) | 830                        | 209      | 243 | 94                             | 0.84                                   | 2.62                       | 8.79                      | 2.22      | 2.58  |

|                               |       |                            |          |     |                                |   |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|---|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@127V60Hz |       | <b>ASHRAE32</b><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) | 225                        | 57       | 66  | 61                             | 0.58                                    | 0.71                       | 3.65                      | 0.92      | 1.07  |
| -30                           | (-22) | 307                        | 77       | 90  | 71                             | 0.65                                    | 0.96                       | 4.35                      | 1.10      | 1.27  |
| -25                           | (-13) | 397                        | 100      | 116 | 78                             | 0.71                                    | 1.25                       | 5.10                      | 1.28      | 1.49  |
| -20                           | (- 4) | 502                        | 127      | 147 | 85                             | 0.77                                    | 1.58                       | 5.91                      | 1.49      | 1.73  |
| -15                           | (+ 5) | 632                        | 159      | 185 | 93                             | 0.84                                    | 1.99                       | 6.81                      | 1.72      | 1.99  |
| -10                           | (+14) | 794                        | 200      | 233 | 101                            | 0.91                                    | 2.50                       | 7.79                      | 1.96      | 2.28  |

|                               |       |                            |          |     |                                |   |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|---|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@127V60Hz |       | <b>ASHRAE32</b><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) | 184                        | 46       | 54  | 63                             | 0.62                                    | 0.58                       | 2.90                      | 0.73      | 0.85  |
| -30                           | (-22) | 275                        | 69       | 80  | 73                             | 0.69                                    | 0.86                       | 3.71                      | 0.93      | 1.09  |
| -25                           | (-13) | 369                        | 93       | 108 | 82                             | 0.75                                    | 1.16                       | 4.50                      | 1.13      | 1.32  |
| -20                           | (- 4) | 474                        | 119      | 139 | 90                             | 0.82                                    | 1.49                       | 5.28                      | 1.33      | 1.55  |
| -15                           | (+ 5) | 599                        | 151      | 176 | 99                             | 0.89                                    | 1.89                       | 6.07                      | 1.53      | 1.78  |
| -10                           | (+14) | 752                        | 190      | 220 | 109                            | 0.98                                    | 2.37                       | 6.87                      | 1.73      | 2.01  |

### 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) | 118                        | 30       | 35  | 65                                      | 0.68                          | 0.37                    | 1.82                      | 0.46      | 0.53  |
| -30                           | (-22) | 222                        | 56       | 65  | 76                                      | 0.74                          | 0.70                    | 2.82                      | 0.71      | 0.83  |
| -25                           | (-13) | 324                        | 82       | 95  | 86                                      | 0.80                          | 1.02                    | 3.73                      | 0.94      | 1.09  |
| -20                           | (- 4) | 434                        | 109      | 127 | 95                                      | 0.86                          | 1.36                    | 4.57                      | 1.15      | 1.34  |
| -15                           | (+ 5) | 559                        | 141      | 164 | 105                                     | 0.94                          | 1.76                    | 5.34                      | 1.35      | 1.57  |
| -10                           | (+14) | 708                        | 179      | 208 | 117                                     | 1.04                          | 2.24                    | 6.06                      | 1.53      | 1.77  |

### F - EXTERNAL CHARACTERISTICS

|                         |                                |      |                          |
|-------------------------|--------------------------------|------|--------------------------|
| 1 Base plate            | Universal EUEM                 |      |                          |
| 2 Tray holder           | No                             |      |                          |
| 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             | 6.5 +0.12/-0.08                | [mm] | (0.256" +0.005"/-0.003") |
| 3.3.1 Material          | Copper                         |      |                          |
| 3.3.2 Shape             | Slanted 45° up + 45° to Back   |      |                          |
| 3.4 Oil cooler (Copper) | No                             | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                   |      |                          |