

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | EM TS2125U      |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number        | 513300757       |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |   |                                   |           |
|------------------------------------|---|-----------------------------------|-----------|
| 1 Type                             | Hermetic reciprocating compressor                         |                                   |           |
| 2 Refrigerant                      | R-290   |                                   |           |
| 3 Nominal voltage and frequency    | 220-240 / 50  | [ V / Hz ]                        |           |
| 4 Application type                 | Low Back Pressure (Curves until T.Evap -10°C / Peak 60°C) |                                   |           |
| 4.1 Evaporating temperature range  | -35°C to -10°C  | (-31°F to 14°F)                   |           |
| 5 Motor type                       | CSIR  |                                   |           |
| 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) | Fan   | 187 to 255 V                      | -         |
| 8.2 LBP (43°C Ambient temperature) | Fan   | 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                      | 18.4  | [kgf/cm <sup>2</sup> ] (262 psig) | / °C - °F |
| 9.2 Peak                           | 20.6  | [kgf/cm <sup>2</sup> ] (293 psig) | / °C - °F |
| 10 Maximum winding temperature     | 130   | [ °C ]                            |           |

### B - MECHANICAL DATA

|                               |               |                                  |
|-------------------------------|---------------|----------------------------------|
| 1 Commercial designation      | 1/3           | [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 | ESTER / ISO22 |                                  |
| 4 Weight (with oil charge)    | 7.8           | [kg] (17.20 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                       | Current Relay                      |                                    |
| 2.1 Starting device                          | MTRP-34                            |                                    |
| 3 Start capacitor                            | 43-53(330)                         | [μF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                  | [μF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM276NFBYY-53                     |                                    |
| 6 Start winding resistance                   |                                    | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     |                                    | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50 Hz)        | 8.50                               | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz)     | -                                  | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz)      | -                                  | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | CCC                                |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                             |                               |  |                           |  |       |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@220V50Hz |          |     | ASHRAELBP32<br>Fan          |                               | 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] |
| 1031                          | 260      | 302 | 197                         | 1.21                          | 3.07   | 5.23                      | 1.32                                   | 1.53  |

### E - PERFORMANCE - CURVES

|                               |       |                            |                 |     |                                       |                               |                         |                           |           |       |
|-------------------------------|-------|----------------------------|-----------------|-----|---------------------------------------|-------------------------------|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |       |                            | ASHRAE32<br>Fan |     | (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) | 757                        | 191             | 222 | 135                                   | 1.01                          | 2.24                    | 5.58                      | 1.41      | 1.63  |
| -30                           | (-22) | 969                        | 244             | 284 | 150                                   | 1.05                          | 2.87                    | 6.46                      | 1.63      | 1.89  |
| -25                           | (-13) | 1219                       | 307             | 357 | 165                                   | 1.09                          | 3.62                    | 7.41                      | 1.87      | 2.17  |
| -20                           | (- 4) | 1509                       | 380             | 442 | 179                                   | 1.14                          | 4.50                    | 8.45                      | 2.13      | 2.48  |
| -15                           | (+ 5) | 1843                       | 465             | 540 | 193                                   | 1.19                          | 5.52                    | 9.59                      | 2.42      | 2.81  |
| -10                           | (+14) | 2223                       | 560             | 651 | 205                                   | 1.24                          | 6.69                    | 10.84                     | 2.73      | 3.18  |

|                               |       |                            |                 |     |  |                               |                         |                           |           |       |
|-------------------------------|-------|----------------------------|-----------------|-----|--|-------------------------------|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |       |                            | ASHRAE32<br>Fan |     | (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) | 670                        | 169             | 196 | 141                                    | 1.02                          | 1.98                    | 4.75                      | 1.20      | 1.39  |
| -30                           | (-22) | 859                        | 217             | 252 | 158                                    | 1.07                          | 2.55                    | 5.42                      | 1.37      | 1.59  |
| -25                           | (-13) | 1084                       | 273             | 318 | 176                                    | 1.13                          | 3.22                    | 6.14                      | 1.55      | 1.80  |
| -20                           | (- 4) | 1345                       | 339             | 394 | 194                                    | 1.19                          | 4.01                    | 6.91                      | 1.74      | 2.02  |
| -15                           | (+ 5) | 1646                       | 415             | 482 | 212                                    | 1.26                          | 4.93                    | 7.74                      | 1.95      | 2.27  |
| -10                           | (+14) | 1990                       | 502             | 583 | 230                                    | 1.33                          | 5.99                    | 8.65                      | 2.18      | 2.54  |

|                               |       |                            |                 |     |  |                               |                         |                           |           |       |
|-------------------------------|-------|----------------------------|-----------------|-----|--|-------------------------------|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |       |                            | ASHRAE32<br>Fan |     | (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) | 575                        | 145             | 169 | 146                                    | 1.03                          | 1.70                    | 3.96                      | 1.00      | 1.16  |
| -30                           | (-22) | 743                        | 187             | 218 | 165                                    | 1.09                          | 2.20                    | 4.51                      | 1.14      | 1.32  |
| -25                           | (-13) | 941                        | 237             | 276 | 186                                    | 1.16                          | 2.80                    | 5.05                      | 1.27      | 1.48  |
| -20                           | (- 4) | 1173                       | 296             | 344 | 208                                    | 1.24                          | 3.50                    | 5.62                      | 1.42      | 1.65  |
| -15                           | (+ 5) | 1442                       | 363             | 423 | 231                                    | 1.33                          | 4.32                    | 6.22                      | 1.57      | 1.82  |
| -10                           | (+14) | 1750                       | 441             | 513 | 255                                    | 1.42                          | 5.26                    | 6.85                      | 1.73      | 2.01  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V50Hz |       | ASHRAE32<br>Fan            |          |     | (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) | 480                        | 121      | 141 | 149                                    | 1.04                          | 1.42                    | 3.20                      | 0.81      | 0.94  |
| -30                           | (-22) | 625                        | 157      | 183 | 170                                    | 1.11                          | 1.85                    | 3.68                      | 0.93      | 1.08  |
| -25                           | (-13) | 798                        | 201      | 234 | 194                                    | 1.20                          | 2.37                    | 4.13                      | 1.04      | 1.21  |
| -20                           | (- 4) | 1000                       | 252      | 293 | 220                                    | 1.29                          | 2.98                    | 4.56                      | 1.15      | 1.34  |
| -15                           | (+ 5) | 1237                       | 312      | 362 | 249                                    | 1.40                          | 3.70                    | 4.99                      | 1.26      | 1.46  |
| -10                           | (+14) | 1508                       | 380      | 442 | 278                                    | 1.52                          | 4.54                    | 5.42                      | 1.37      | 1.59  |

### F - EXTERNAL CHARACTERISTICS

|                         |                              |      |                          |
|-------------------------|------------------------------|------|--------------------------|
| 1 Base plate            | Universal AMEM               |      |                          |
| 2 Tray holder           | Yes                          |      |                          |
| 3 Connectors            |                              |      |                          |
| 3.1 SUCTION             | 6.2 +0.05/+0.05              | [mm] | (0.244" +0.002"/+0.002") |
| 3.1.1 Material          | Copper                       |      |                          |
| 3.1.2 Shape             | Slanted 40° up + 45° to Back |      |                          |
| 3.2 DISCHARGE           | 4.9 +0.10/-0.05              | [mm] | (0.193" +0.004"/-0.002") |
| 3.2.1 Material          | Copper                       |      |                          |
| 3.2.2 Shape             | Slanted 0° up + 24° to Back  |      |                          |
| 3.3 PROCESS             | 6.2 +0.05/+0.05              | [mm] | (0.244" +0.002"/+0.002") |
| 3.3.1 Material          | Copper                       |      |                          |
| 3.3.2 Shape             | Slanted 40° up + 45° to Back |      |                          |
| 3.4 Oil cooler (Copper) | No                           | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                 |      |                          |