

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | EM 2U80HLP      |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number        | 513305501       |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|  |                                   |                                   |             |
|--|-----------------------------------|-----------------------------------|-------------|
| 1 Type                                     | Hermetic reciprocating compressor |                                   |             |
| 2 Refrigerant                              | R-134a                            |                                   |             |
| 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                            | -                                 | 98 to 140 V |
| 8.2 LBP (43°C Ambient temperature)         | Static                            | -                                 | 98 to 140 V |
| 8.3 HBP (32°C Ambient temperature)         | -                                 | -                                 | -           |
| 8.4 HBP (43°C Ambient temperature)         | -                                 | -                                 | -           |
| 9 Maximum condensing pressures/temperature |                                   |                                   |             |
| 9.1 Operating (gauge)                      | 16.2                              | [kgf/cm <sup>2</sup> ] (230 psig) | / °C - °F   |
| 9.2 Peak (gauge)                           | 20.6                              | [kgf/cm <sup>2</sup> ] (293 psig) | / °C - °F   |
| 10 Maximum winding temperature             | 130                               | [ °C ]                            |             |

### B - MECHANICAL DATA

|                               |               |  |
|-------------------------------|---------------|--|
| 1 Commercial designation      | 1/4           | [hp]                                       |
| 2 Displacement                | 6.99          | [cm <sup>3</sup> ] (0.427 cu.in)           |
| 2.1 Bore [mm]                 | 22.500        |  |
| 2.2 Stroke [mm]               | 17.600        |  |
| 3 Lubricant charge            | 150           | [ml] (5.07 fl.oz.)                         |
| 3.1 Lubricants approved       |               |  |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 |  |
| 4 Weight (with oil charge)    | 8.36          | [kg] (18.43 lb.)                           |
| 5 Nitrogen charge             | 0.2 to 0.3    | [kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig) |

### 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                          | 8EA14C3                            |                                    |
| 3 Start capacitor                            | -                                  | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 15(184)/12(184)                    | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM445KFBYY-53                     |                                    |
| 6 Start winding resistance                   | 5.20                               | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 2.55                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 19.50                              | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 2.60                               | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | -                                  | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | IMTRO - TUV                        |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@115V60Hz |          |     | 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] |
| 870                           | 219      | 255 | 150                            | 1.68                             | 4.94   | 5.80                      | 1.46                                   | 1.70  |

### E - PERFORMANCE - CURVES

|                               |       |                            |          |     |                                |  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |       | 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) | 479                        | 121      | 140 | 98                             | 1.33                                   | 2.71                       | 4.87                      | 1.23      | 1.43  |
| -30                           | (-22) | 640                        | 161      | 188 | 113                            | 1.42                                   | 3.63                       | 5.72                      | 1.44      | 1.68  |
| -25                           | (-13) | 853                        | 215      | 250 | 129                            | 1.53                                   | 4.84                       | 6.65                      | 1.68      | 1.95  |
| -20                           | (- 4) | 1125                       | 284      | 330 | 146                            | 1.65                                   | 6.41                       | 7.70                      | 1.94      | 2.26  |
| -15                           | (+ 5) | 1464                       | 369      | 429 | 164                            | 1.78                                   | 8.36                       | 8.88                      | 2.24      | 2.60  |
| -10                           | (+14) | 1877                       | 473      | 550 | 183                            | 1.92                                   | 10.76                      | 10.22                     | 2.58      | 3.00  |

|                               |       |                            |          |     |                                |   |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|---|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |       | 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) | 459                        | 116      | 134 | 102                            | 1.36                                    | 2.60                       | 4.49                      | 1.13      | 1.32  |
| -30                           | (-22) | 616                        | 155      | 180 | 118                            | 1.46                                    | 3.49                       | 5.25                      | 1.32      | 1.54  |
| -25                           | (-13) | 817                        | 206      | 239 | 136                            | 1.58                                    | 4.64                       | 6.05                      | 1.52      | 1.77  |
| -20                           | (- 4) | 1068                       | 269      | 313 | 155                            | 1.72                                    | 6.08                       | 6.91                      | 1.74      | 2.02  |
| -15                           | (+ 5) | 1378                       | 347      | 404 | 175                            | 1.86                                    | 7.87                       | 7.86                      | 1.98      | 2.30  |
| -10                           | (+14) | 1754                       | 442      | 514 | 196                            | 2.02                                    | 10.05                      | 8.93                      | 2.25      | 2.62  |

|                               |       |                            |          |     |                                |   |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|---|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |       | 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) | 425                        | 107      | 125 | 104                            | 1.37                                    | 2.41                       | 4.07                      | 1.03      | 1.19  |
| -30                           | (-22) | 586                        | 148      | 172 | 122                            | 1.49                                    | 3.32                       | 4.79                      | 1.21      | 1.40  |
| -25                           | (-13) | 782                        | 197      | 229 | 142                            | 1.63                                    | 4.44                       | 5.52                      | 1.39      | 1.62  |
| -20                           | (- 4) | 1021                       | 257      | 299 | 164                            | 1.78                                    | 5.81                       | 6.26                      | 1.58      | 1.83  |
| -15                           | (+ 5) | 1311                       | 330      | 384 | 186                            | 1.95                                    | 7.48                       | 7.05                      | 1.78      | 2.07  |
| -10                           | (+14) | 1657                       | 418      | 486 | 210                            | 2.13                                    | 9.49                       | 7.91                      | 1.99      | 2.32  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@115V60Hz |       | 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) | 353                        | 89       | 103 | 102                                     | 1.35                          | 1.99                    | 3.49                      | 0.88      | 1.02  |
| -30                           | (-22) | 525                        | 132      | 154 | 123                                     | 1.49                          | 2.98                    | 4.24                      | 1.07      | 1.24  |
| -25                           | (-13) | 725                        | 183      | 212 | 146                                     | 1.66                          | 4.12                    | 4.95                      | 1.25      | 1.45  |
| -20                           | (- 4) | 959                        | 242      | 281 | 170                                     | 1.83                          | 5.46                    | 5.64                      | 1.42      | 1.65  |
| -15                           | (+ 5) | 1236                       | 311      | 362 | 196                                     | 2.03                          | 7.05                    | 6.33                      | 1.59      | 1.85  |
| -10                           | (+14) | 1562                       | 394      | 458 | 222                                     | 2.23                          | 8.95                    | 7.04                      | 1.78      | 2.06  |

### F - EXTERNAL CHARACTERISTICS

|                         |                              |      |                          |
|-------------------------|------------------------------|------|--------------------------|
| 1 Base plate            | Universal EUEM               |      |                          |
| 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 30° up + 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                 |      |                          |