

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | EM 2X3125U      |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number        | 513304087       |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |   |                                   |              |
|------------------------------------|---|-----------------------------------|--------------|
| 1 Type                             | Hermetic reciprocating compressor           |                                   |              |
| 2 Refrigerant                      | R-290                                       |                                   |              |
| 3 Nominal voltage and frequency    | 115-127 / 60                                | [ V / Hz ]                        |              |
| 4 Application type                 | Low-Medium Back Pressure (Light Commercial) |                                   |              |
| 4.1 Evaporating temperature range  | -35°C to 0°C                                | (-31°F to 32°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/Fan                                  | -                                 | 103 to 140 V |
| 8.2 LBP (43°C Ambient temperature) | Static/Fan                                  | -                                 | 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                      | 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                | 6.09          | [cm <sup>3</sup> ] (0.372 cu.in)           |
| 2.1 Bore [mm]                 | 21.000        |  |
| 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 / ISO22 |  |
| 4 Weight (with oil charge)    | 7.84          | [kg] (17.28 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                          | 8EA14C3/8EA14E63/8EA21C3/QPS2-A4R7MD3/QPS2-A4R7MI |                                    |
| 3 Start capacitor                            | -   | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 20(180)   | [µF(VAC minimum)]                  |
| 5 Motor protection                           | DRB46N61A*  |                                    |
| 6 Start winding resistance                   | 5.41  | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 2.86  | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 16.80   | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 3.84  | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | 4.23  | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | CE - IMTRO - ISI - TUV - UKCA - UL                |                                    |

### 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] |
| 1217                          | 307      | 357 | 212                            | 1.89                             | 3.62   | 5.74                      | 1.45                                   | 1.68  |

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@115V60Hz |          |     | 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<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] |
| 1231                          | 310      | 361 | 213                            | 1.90                             | 3.66   | 5.79                      | 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)                     | 773                        | 195      | 226                | 144                            | 1.28                                  | 2.29                       | 5.36                      | 1.35      | 1.57  |
| -30 (-22)                     | 984                        | 248      | 288                | 162                            | 1.44                                  | 2.92                       | 6.09                      | 1.53      | 1.78  |
| -25 (-13)                     | 1228                       | 309      | 360                | 178                            | 1.59                                  | 3.65                       | 6.93                      | 1.75      | 2.03  |
| -20 (- 4)                     | 1511                       | 381      | 443                | 193                            | 1.71                                  | 4.51                       | 7.88                      | 1.99      | 2.31  |
| -15 (+ 5)                     | 1842                       | 464      | 540                | 207                            | 1.84                                  | 5.52                       | 8.92                      | 2.25      | 2.61  |
| -10 (+14)                     | 2227                       | 561      | 652                | 221                            | 1.97                                  | 6.70                       | 10.05                     | 2.53      | 2.94  |
| -5 (+23)                      | 2673                       | 674      | 783                | 237                            | 2.12                                  | 8.09                       | 11.26                     | 2.84      | 3.30  |
| 0 (+32)                       | 3189                       | 804      | 934                | 254                            | 2.30                                  | 9.70                       | 12.55                     | 3.16      | 3.68  |

|                               |                            |          |                    |                                |  |                            |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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)                     | 718                        | 181      | 210                | 152                            | 1.35                                   | 2.12                       | 4.74                      | 1.19      | 1.39  |
| -30 (-22)                     | 936                        | 236      | 274                | 173                            | 1.54                                   | 2.78                       | 5.39                      | 1.36      | 1.58  |
| -25 (-13)                     | 1184                       | 298      | 347                | 193                            | 1.72                                   | 3.52                       | 6.12                      | 1.54      | 1.79  |
| -20 (- 4)                     | 1470                       | 370      | 431                | 212                            | 1.89                                   | 4.39                       | 6.93                      | 1.75      | 2.03  |
| -15 (+ 5)                     | 1801                       | 454      | 528                | 230                            | 2.05                                   | 5.39                       | 7.81                      | 1.97      | 2.29  |
| -10 (+14)                     | 2184                       | 550      | 640                | 249                            | 2.23                                   | 6.57                       | 8.75                      | 2.20      | 2.56  |
| -5 (+23)                      | 2626                       | 662      | 770                | 269                            | 2.42                                   | 7.94                       | 9.74                      | 2.45      | 2.85  |
| 0 (+32)                       | 3136                       | 790      | 919                | 291                            | 2.64                                   | 9.53                       | 10.78                     | 2.72      | 3.16  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@115V60Hz |       | ASHRAE32<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) | 646                        | 163      | 189 | 154                                     | 1.36                          | 1.91                    | 4.22                      | 1.06      | 1.24  |
| -30                           | (-22) | 868                        | 219      | 254 | 179                                     | 1.59                          | 2.57                    | 4.83                      | 1.22      | 1.41  |
| -25                           | (-13) | 1118                       | 282      | 328 | 203                                     | 1.81                          | 3.32                    | 5.48                      | 1.38      | 1.61  |
| -20                           | (- 4) | 1403                       | 354      | 411 | 227                                     | 2.02                          | 4.19                    | 6.18                      | 1.56      | 1.81  |
| -15                           | (+ 5) | 1732                       | 436      | 507 | 250                                     | 2.23                          | 5.19                    | 6.93                      | 1.75      | 2.03  |
| -10                           | (+14) | 2110                       | 532      | 618 | 274                                     | 2.45                          | 6.35                    | 7.70                      | 1.94      | 2.26  |
| -5                            | (+23) | 2546                       | 642      | 746 | 299                                     | 2.69                          | 7.70                    | 8.51                      | 2.14      | 2.49  |
| 0                             | (+32) | 3047                       | 768      | 893 | 327                                     | 2.96                          | 9.26                    | 9.33                      | 2.35      | 2.73  |

| 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) | 557                        | 140      | 163 | 149                                     | 1.32                          | 1.65                    | 3.73                      | 0.94      | 1.09  |
| -30                           | (-22) | 780                        | 197      | 229 | 180                                     | 1.60                          | 2.31                    | 4.31                      | 1.09      | 1.26  |
| -25                           | (-13) | 1030                       | 259      | 302 | 209                                     | 1.86                          | 3.06                    | 4.92                      | 1.24      | 1.44  |
| -20                           | (- 4) | 1312                       | 331      | 385 | 237                                     | 2.12                          | 3.91                    | 5.55                      | 1.40      | 1.63  |
| -15                           | (+ 5) | 1636                       | 412      | 479 | 266                                     | 2.38                          | 4.90                    | 6.19                      | 1.56      | 1.81  |
| -10                           | (+14) | 2007                       | 506      | 588 | 295                                     | 2.65                          | 6.04                    | 6.83                      | 1.72      | 2.00  |
| -5                            | (+23) | 2434                       | 613      | 713 | 326                                     | 2.94                          | 7.36                    | 7.48                      | 1.88      | 2.19  |
| 0                             | (+32) | 2923                       | 737      | 857 | 359                                     | 3.26                          | 8.88                    | 8.11                      | 2.04      | 2.38  |

### 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 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                   |      |                          |