

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | EM 2Y80HLP      |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number        | 513301502       |

### 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-Medium Back Pressure          |                                   |             |
| 4.1 Evaporating temperature range  | -35°C to -5°C                     | (-31°F to 23°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 temperature   |                                   |                                   |             |
| 9.1 Operating                      | 14.2                              | [kgf/cm <sup>2</sup> ] (202 psig) | / °C - °F   |
| 9.2 Peak                           | 15.9                              | [kgf/cm <sup>2</sup> ] (226 psig) | / °C - °F   |
| 10 Maximum winding temperature     | 130                               | [ °C ]                            |             |

### B - MECHANICAL DATA

|                               |               |  |
|-------------------------------|---------------|--|
| 1 Commercial designation      |               | [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                       | Combo                              |                                    |
| 2.1 Starting device                          | 3ARR5XM4BX                         |                                    |
| 3 Start capacitor                            | -                                  | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 12(180)                            | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 3ARR5XM4B                          |                                    |
| 6 Start winding resistance                   | 5.30                               | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 2.80                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 17.90                              | [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             | 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] |
| 850                           | 214      | 249 | 149                            | 1.49                             | 4.83   | 5.72                      | 1.44                                   | 1.68  |

### 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) | 478                        | 120      | 140 | 96                             | 1.14                                  | 2.70                       | 4.95                      | 1.25      | 1.45  |
| -30                           | (-22) | 645                        | 163      | 189 | 111                            | 1.24                                  | 3.66                       | 5.80                      | 1.46      | 1.70  |
| -25                           | (-13) | 858                        | 216      | 251 | 127                            | 1.35                                  | 4.87                       | 6.74                      | 1.70      | 1.98  |
| -20                           | (- 4) | 1120                       | 282      | 328 | 145                            | 1.48                                  | 6.38                       | 7.77                      | 1.96      | 2.28  |
| -15                           | (+ 5) | 1436                       | 362      | 421 | 162                            | 1.62                                  | 8.20                       | 8.87                      | 2.23      | 2.60  |
| -10                           | (+14) | 1808                       | 456      | 530 | 181                            | 1.79                                  | 10.36                      | 10.03                     | 2.53      | 2.94  |
| -5                            | (+23) | 2240                       | 565      | 656 | 199                            | 1.98                                  | 12.89                      | 11.24                     | 2.83      | 3.29  |

| 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) | 440                        | 111      | 129 | 99                             | 1.15                                   | 2.49                       | 4.45                      | 1.12      | 1.30  |
| -30                           | (-22) | 600                        | 151      | 176 | 115                            | 1.27                                   | 3.40                       | 5.21                      | 1.31      | 1.53  |
| -25                           | (-13) | 807                        | 203      | 236 | 133                            | 1.40                                   | 4.58                       | 6.04                      | 1.52      | 1.77  |
| -20                           | (- 4) | 1064                       | 268      | 312 | 153                            | 1.55                                   | 6.06                       | 6.94                      | 1.75      | 2.03  |
| -15                           | (+ 5) | 1375                       | 347      | 403 | 174                            | 1.72                                   | 7.85                       | 7.89                      | 1.99      | 2.31  |
| -10                           | (+14) | 1744                       | 439      | 511 | 196                            | 1.91                                   | 9.99                       | 8.89                      | 2.24      | 2.60  |
| -5                            | (+23) | 2174                       | 548      | 637 | 220                            | 2.14                                   | 12.50                      | 9.92                      | 2.50      | 2.91  |

| 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) | 406                        | 102      | 119 | 103                            | 1.16                                   | 2.30                       | 3.97                      | 1.00      | 1.16  |
| -30                           | (-22) | 553                        | 139      | 162 | 119                            | 1.29                                   | 3.14                       | 4.66                      | 1.17      | 1.36  |
| -25                           | (-13) | 748                        | 189      | 219 | 138                            | 1.44                                   | 4.25                       | 5.40                      | 1.36      | 1.58  |
| -20                           | (- 4) | 994                        | 250      | 291 | 160                            | 1.61                                   | 5.66                       | 6.19                      | 1.56      | 1.81  |
| -15                           | (+ 5) | 1295                       | 326      | 379 | 184                            | 1.81                                   | 7.39                       | 7.02                      | 1.77      | 2.06  |
| -10                           | (+14) | 1654                       | 417      | 485 | 210                            | 2.03                                   | 9.47                       | 7.87                      | 1.98      | 2.31  |
| -5                            | (+23) | 2074                       | 523      | 608 | 237                            | 2.28                                   | 11.93                      | 8.75                      | 2.20      | 2.56  |

### 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) | 376                        | 95       | 110 | 107                                     | 1.16                          | 2.13                    | 3.49                      | 0.88      | 1.02  |
| -30                           | (-22) | 504                        | 127      | 148 | 123                                     | 1.31                          | 2.86                    | 4.12                      | 1.04      | 1.21  |
| -25                           | (-13) | 681                        | 172      | 199 | 143                                     | 1.48                          | 3.86                    | 4.79                      | 1.21      | 1.40  |
| -20                           | (- 4) | 909                        | 229      | 266 | 166                                     | 1.67                          | 5.17                    | 5.49                      | 1.38      | 1.61  |
| -15                           | (+ 5) | 1193                       | 301      | 350 | 192                                     | 1.89                          | 6.81                    | 6.22                      | 1.57      | 1.82  |
| -10                           | (+14) | 1536                       | 387      | 450 | 221                                     | 2.14                          | 8.80                    | 6.95                      | 1.75      | 2.04  |
| -5                            | (+23) | 1942                       | 489      | 569 | 252                                     | 2.43                          | 11.17                   | 7.69                      | 1.94      | 2.25  |

### 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             | Straight         |      |                          |
| 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             | Straight         |      |                          |
| 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             | Straight         |      |                          |
| 3.4 Oil cooler (Copper) | No               | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs     |      |                          |