

### COMPRESSOR DEFINITION

|                           |                        |
|---------------------------|------------------------|
| Designation               | <b>EM 3Y60HLP</b>      |
| Nominal Voltage/Frequency | <b>115-127 V 60 Hz</b> |
| Engineering Number        | <b>513301658</b>       |

### 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                            | -                                 | 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 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                | 5.19          | [cm <sup>3</sup> ] (0.317 cu.in)           |
| 2.1 Bore [mm]                 | 21.000        |  |
| 2.2 Stroke [mm]               | 15.000        |  |
| 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)    | 7.3           | [kg] (16.09 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                          | 8EA14B3/8EA14C3/QPS2-A4R7MD3       |                                    |
| 3 Start capacitor                            | -                                  | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 12(180)/15(180)                    | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM319KFBYY-53                     |                                    |
| 6 Start winding resistance                   | 6.78                               | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 5.28                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 13.00                              | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 1.84                               | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | 2.48                               | [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 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] |
| 648                           | 163      | 190 | 112                         | 1.05                          | 3.68   | 5.79                      | 1.46                                   | 1.70  |

### E - PERFORMANCE - CURVES

|                               |                            |          |                    |                             |                                       |                         |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|-----------------------------|---------------------------------------|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |                            |          | ASHRAE32<br>Static |                             | (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)                     | 373                        | 94       | 109                | 73                          | 0.76                                  | 2.11                    | 5.15                      | 1.30      | 1.51  |
| -30 (-22)                     | 500                        | 126      | 146                | 83                          | 0.84                                  | 2.83                    | 6.04                      | 1.52      | 1.77  |
| -25 (-13)                     | 654                        | 165      | 192                | 94                          | 0.92                                  | 3.71                    | 6.99                      | 1.76      | 2.05  |
| -20 (- 4)                     | 843                        | 212      | 247                | 105                         | 1.01                                  | 4.80                    | 8.04                      | 2.03      | 2.36  |
| -15 (+ 5)                     | 1075                       | 271      | 315                | 116                         | 1.11                                  | 6.14                    | 9.20                      | 2.32      | 2.70  |
| -10 (+14)                     | 1357                       | 342      | 398                | 129                         | 1.22                                  | 7.78                    | 10.50                     | 2.65      | 3.08  |

|                               |                            |          |                    |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@115V60Hz |                            |          | ASHRAE32<br>Static |                             | (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)                     | 339                        | 85       | 99                 | 74                          | 0.77                                   | 1.92                    | 4.55                      | 1.15      | 1.33  |
| -30 (-22)                     | 471                        | 119      | 138                | 88                          | 0.87                                   | 2.67                    | 5.38                      | 1.36      | 1.58  |
| -25 (-13)                     | 626                        | 158      | 184                | 101                         | 0.98                                   | 3.56                    | 6.23                      | 1.57      | 1.83  |
| -20 (- 4)                     | 813                        | 205      | 238                | 115                         | 1.09                                   | 4.63                    | 7.12                      | 1.79      | 2.09  |
| -15 (+ 5)                     | 1038                       | 262      | 304                | 128                         | 1.21                                   | 5.92                    | 8.08                      | 2.04      | 2.37  |
| -10 (+14)                     | 1308                       | 330      | 383                | 143                         | 1.34                                   | 7.50                    | 9.12                      | 2.30      | 2.67  |

|                               |                            |          |                    |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| 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)                     | 271                        | 68       | 79                 | 70                          | 0.74                                   | 1.53                    | 3.85                      | 0.97      | 1.13  |
| -30 (-22)                     | 413                        | 104      | 121                | 87                          | 0.87                                   | 2.34                    | 4.70                      | 1.18      | 1.38  |
| -25 (-13)                     | 574                        | 145      | 168                | 104                         | 1.01                                   | 3.26                    | 5.52                      | 1.39      | 1.62  |
| -20 (- 4)                     | 762                        | 192      | 223                | 121                         | 1.15                                   | 4.34                    | 6.32                      | 1.59      | 1.85  |
| -15 (+ 5)                     | 984                        | 248      | 288                | 138                         | 1.29                                   | 5.62                    | 7.15                      | 1.80      | 2.10  |
| -10 (+14)                     | 1248                       | 315      | 366                | 156                         | 1.44                                   | 7.15                    | 8.02                      | 2.02      | 2.35  |

### 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) | 169                        | 43       | 50  | 58                                     | 0.66                          | 0.96                    | 2.94                      | 0.74      | 0.86  |
| -30                           | (-22) | 325                        | 82       | 95  | 81                                     | 0.83                          | 1.85                    | 3.88                      | 0.98      | 1.14  |
| -25                           | (-13) | 497                        | 125      | 146 | 103                                    | 1.00                          | 2.82                    | 4.73                      | 1.19      | 1.39  |
| -20                           | (- 4) | 691                        | 174      | 202 | 125                                    | 1.18                          | 3.93                    | 5.53                      | 1.39      | 1.62  |
| -15                           | (+ 5) | 915                        | 231      | 268 | 146                                    | 1.36                          | 5.22                    | 6.29                      | 1.59      | 1.84  |
| -10                           | (+14) | 1176                       | 296      | 345 | 168                                    | 1.54                          | 6.74                    | 7.05                      | 1.78      | 2.07  |

### F - EXTERNAL CHARACTERISTICS

|                         |                  |      |                          |
|-------------------------|------------------|------|--------------------------|
| 1 Base plate            | Universal        |      |                          |
| 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     |      |                          |