

### COMPRESSOR DEFINITION

|                           |             |
|---------------------------|-------------|
| Designation               | EM 30HNP    |
| Nominal Voltage/Frequency | 115 V 60 Hz |
| Engineering Number        | 513307060   |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                   |                                   |             |
|------------------------------------|-----------------------------------|-----------------------------------|-------------|
| 1 Type                             | Hermetic reciprocating compressor |                                   |             |
| 2 Refrigerant                      | R-134a                            |                                   |             |
| 3 Nominal voltage and frequency    | 115 / 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                       | RSIR                              |                                   |             |
| 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 135 V |
| 8.2 LBP (43°C Ambient temperature) | Static                            | -                                 | 98 to 135 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      | 1/10          | [hp]                                       |
| 2 Displacement                | 3.00          | [cm <sup>3</sup> ] (0.183 cu.in)           |
| 2.1 Bore [mm]                 | 19.000        |  |
| 2.2 Stroke [mm]               | 10.600        |  |
| 3 Lubricant charge            | 170           | [ml] (5.75 fl.oz.)                         |
| 3.1 Lubricants approved       |               |  |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 |  |
| 4 Weight (with oil charge)    | 7.38          | [kg] (16.27 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 V 60 Hz 1 ~ (Single phase)    |                                    |
| 2 Starting device type                       | PTC                               |                                    |
| 2.1 Starting device                          | 7M4R7MC1/8M4R7MC1/QPS2A4R7MG1 090 |                                    |
| 3 Start capacitor                            | -                                 | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                 | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM757MFBYY-53                    |                                    |
| 6 Start winding resistance                   | 20.90                             | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 5.50                              | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 10.00                             | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | -                                 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | -                                 | [A] - Measured according to UL 984 |
| 11 Approval boards certification             |                                   |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                                |                                  |  |                           |                                      |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--------------------------------------|-------|
| TEST CONDITIONS:<br>@115V60Hz |          |     | ASHRAEHBP32<br>Static          |                                  | Evaporating temperature<br>(Condensing temperature |                           | 7.2°C (44.96°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] |
| 1390                          | 350      | 407 | 163                            | 2.00                             |  | 8.53                      | 2.15                                 | 2.50  |

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| 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] |
| 310                           | 78       | 91  | 97                             | 1.70                             | 1.76   | 3.20                      | 0.81                                   | 0.94  |

### E - PERFORMANCE - CURVES

|                               |       |                            |                    |     |  |                                  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|--------------------|-----|--|----------------------------------|----------------------------|---------------------------|-----------|-------|
| 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) | 142                        | 36                 | 42  | 65                                     | 1.58                             | 0.80                       | 2.19                      | 0.55      | 0.64  |
| -30                           | (-22) | 245                        | 62                 | 72  | 77                                     | 1.62                             | 1.39                       | 3.09                      | 0.78      | 0.91  |
| -25                           | (-13) | 336                        | 85                 | 98  | 89                                     | 1.65                             | 1.91                       | 3.76                      | 0.95      | 1.10  |
| -20                           | (- 4) | 428                        | 108                | 125 | 100                                    | 1.68                             | 2.44                       | 4.33                      | 1.09      | 1.27  |
| -15                           | (+ 5) | 538                        | 135                | 158 | 110                                    | 1.71                             | 3.07                       | 4.92                      | 1.24      | 1.44  |
| -10                           | (+14) | 680                        | 171                | 199 | 120                                    | 1.74                             | 3.90                       | 5.67                      | 1.43      | 1.66  |
| -5                            | (+23) | 870                        | 219                | 255 | 130                                    | 1.79                             | 5.00                       | 6.71                      | 1.69      | 1.97  |

|                               |       |                            |                    |     |  |                                  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|--------------------|-----|--|----------------------------------|----------------------------|---------------------------|-----------|-------|
| 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) | 97                         | 24                 | 28  | 73                                     | 1.58                             | 0.55                       | 1.35                      | 0.34      | 0.39  |
| -30                           | (-22) | 197                        | 50                 | 58  | 84                                     | 1.62                             | 1.12                       | 2.32                      | 0.59      | 0.68  |
| -25                           | (-13) | 286                        | 72                 | 84  | 94                                     | 1.65                             | 1.62                       | 3.04                      | 0.77      | 0.89  |
| -20                           | (- 4) | 377                        | 95                 | 111 | 104                                    | 1.68                             | 2.15                       | 3.64                      | 0.92      | 1.07  |
| -15                           | (+ 5) | 488                        | 123                | 143 | 115                                    | 1.71                             | 2.78                       | 4.24                      | 1.07      | 1.24  |
| -10                           | (+14) | 632                        | 159                | 185 | 126                                    | 1.76                             | 3.62                       | 4.98                      | 1.26      | 1.46  |
| -5                            | (+23) | 825                        | 208                | 242 | 138                                    | 1.83                             | 4.74                       | 6.00                      | 1.51      | 1.76  |

### 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) | 66                         | 17       | 19  | 76                                      | 1.58                          | 0.37                    | 0.84                      | 0.21      | 0.25  |
| -30                           | (-22) | 160                        | 40       | 47  | 86                                      | 1.62                          | 0.91                    | 1.85                      | 0.47      | 0.54  |
| -25                           | (-13) | 244                        | 61       | 71  | 95                                      | 1.65                          | 1.38                    | 2.59                      | 0.65      | 0.76  |
| -20                           | (- 4) | 332                        | 84       | 97  | 105                                     | 1.68                          | 1.89                    | 3.18                      | 0.80      | 0.93  |
| -15                           | (+ 5) | 440                        | 111      | 129 | 117                                     | 1.72                          | 2.51                    | 3.75                      | 0.95      | 1.10  |
| -10                           | (+14) | 583                        | 147      | 171 | 129                                     | 1.78                          | 3.34                    | 4.45                      | 1.12      | 1.30  |
| -5                            | (+23) | 776                        | 195      | 227 | 144                                     | 1.86                          | 4.46                    | 5.40                      | 1.36      | 1.58  |

### F - EXTERNAL CHARACTERISTICS

|                         |                               |      |                          |
|-------------------------|-------------------------------|------|--------------------------|
| 1 Base plate            | Universal EG/F/AMEM version 2 |      |                          |
| 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 plated steel           |      |                          |
| 3.1.2 Shape             | Straight                      |      |                          |
| 3.2 DISCHARGE           | 5 +0.18/-0.06                 | [mm] | (0.197" +0.007"/-0.002") |
| 3.2.1 Material          | Copper plated steel           |      |                          |
| 3.2.2 Shape             | Slanted                       |      |                          |
| 3.3 PROCESS             | 6.5 +0.12/-0.08               | [mm] | (0.256" +0.005"/-0.003") |
| 3.3.1 Material          | Copper plated steel           |      |                          |
| 3.3.2 Shape             | Straight                      |      |                          |
| 3.4 Oil cooler (Copper) | No                            | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                  |      |                          |