

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | EM 30HNR        |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number        | 513307250       |

### 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                       | RSIR/CSIR                         |                                   |             |
| 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                        | -                                 | 98 to 140 V |
| 8.2 LBP (43°C Ambient temperature) | Static/Fan                        | -                                 | 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      | 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            | 200           | [ml] (6.76 fl.oz.)                         |
| 3.1 Lubricants approved       |               |  |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 |  |
| 4 Weight (with oil charge)    | 7.1           | [kg] (15.65 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                       | Current Relay                      |                                    |
| 2.1 Starting device                          | 213514075                          |                                    |
| 3 Start capacitor                            | 88-108(115)                        | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                  | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 5TM283NHBYY-53                     |                                    |
| 6 Start winding resistance                   | 17.95                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 7.70                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 10.50                              | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 1.30                               | [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 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] |
| 305                           | 77       | 89  | 78                          | 1.03                          | 1.73   | 3.90                      | 0.98                                   | 1.14  |

### E - PERFORMANCE - CURVES

|                               |                            |          |                    |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| 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)                     | 130                        | 33       | 38                 | 58                          | 0.86                                   | 0.74                    | 2.27                      | 0.57      | 0.66  |
| -30 (-22)                     | 213                        | 54       | 62                 | 67                          | 0.90                                   | 1.20                    | 3.18                      | 0.80      | 0.93  |
| -25 (-13)                     | 306                        | 77       | 90                 | 77                          | 0.96                                   | 1.74                    | 3.97                      | 1.00      | 1.16  |
| -20 (- 4)                     | 411                        | 104      | 120                | 87                          | 1.02                                   | 2.34                    | 4.69                      | 1.18      | 1.38  |
| -15 (+ 5)                     | 530                        | 134      | 155                | 98                          | 1.09                                   | 3.03                    | 5.39                      | 1.36      | 1.58  |
| -10 (+14)                     | 665                        | 168      | 195                | 108                         | 1.17                                   | 3.81                    | 6.12                      | 1.54      | 1.79  |

|                               |                            |          |                    |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| 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)                     | 91                         | 23       | 27                 | 55                          | 0.85                                   | 0.52                    | 1.67                      | 0.42      | 0.49  |
| -30 (-22)                     | 171                        | 43       | 50                 | 64                          | 0.89                                   | 0.97                    | 2.68                      | 0.68      | 0.79  |
| -25 (-13)                     | 262                        | 66       | 77                 | 75                          | 0.95                                   | 1.49                    | 3.51                      | 0.88      | 1.03  |
| -20 (- 4)                     | 367                        | 93       | 108                | 88                          | 1.03                                   | 2.09                    | 4.21                      | 1.06      | 1.23  |
| -15 (+ 5)                     | 487                        | 123      | 143                | 101                         | 1.13                                   | 2.78                    | 4.81                      | 1.21      | 1.41  |
| -10 (+14)                     | 623                        | 157      | 183                | 115                         | 1.23                                   | 3.57                    | 5.38                      | 1.36      | 1.58  |

|                               |                            |          |                    |                             |  |                         |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| 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)                     | 45                         | 11       | 13                 | 50                          | 0.84                                   | 0.26                    | 0.89                      | 0.22      | 0.26  |
| -30 (-22)                     | 123                        | 31       | 36                 | 59                          | 0.88                                   | 0.70                    | 2.08                      | 0.52      | 0.61  |
| -25 (-13)                     | 214                        | 54       | 63                 | 71                          | 0.94                                   | 1.21                    | 3.04                      | 0.77      | 0.89  |
| -20 (- 4)                     | 319                        | 80       | 94                 | 85                          | 1.03                                   | 1.82                    | 3.79                      | 0.96      | 1.11  |
| -15 (+ 5)                     | 441                        | 111      | 129                | 101                         | 1.14                                   | 2.52                    | 4.40                      | 1.11      | 1.29  |
| -10 (+14)                     | 580                        | 146      | 170                | 119                         | 1.27                                   | 3.32                    | 4.90                      | 1.24      | 1.44  |

### F - EXTERNAL CHARACTERISTICS

|                         |                                |      |                          |
|-------------------------|--------------------------------|------|--------------------------|
| 1 Base plate            | Universal AMEM                 |      |                          |
| 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             | Slanted 34° to Back            |      |                          |
| 3.2 DISCHARGE           | 6.5 +0.12/-0.08                | [mm] | (0.256" +0.005"/-0.003") |
| 3.2.1 Material          | Copper                         |      |                          |
| 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                         |      |                          |
| 3.3.2 Shape             | Slanted parallel to Base Plate |      |                          |
| 3.4 Oil cooler (Copper) | No                             | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                   |      |                          |