

### COMPRESSOR DEFINITION

|                           |                |
|---------------------------|----------------|
| Designation               | EM IE40HJP     |
| Nominal Voltage/Frequency | 220 V 50-60 Hz |
| Engineering Number        | 513306122      |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|  |                                   |                                   |              |
|--|-----------------------------------|-----------------------------------|--------------|
| 1 Type                                     | Hermetic reciprocating compressor |                                   |              |
| 2 Refrigerant                              | R-134a                            |                                   |              |
| 3 Nominal voltage and frequency            | 220 / 50-60                       | [ 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                              |                                   |              |
| 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                            | 198 to 242 V                      | 198 to 242 V |
| 8.2 LBP (43°C Ambient temperature)         | Static                            | 198 to 242 V                      | 198 to 242 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      | 1/8           | [hp]                                       |
| 2 Displacement                | 3.40          | [cm <sup>3</sup> ] (0.207 cu.in)           |
| 2.1 Bore [mm]                 | 19.000        |  |
| 2.2 Stroke [mm]               | 12.000        |  |
| 3 Lubricant charge            | 180           | [ml] (6.09 fl.oz.)                         |
| 3.1 Lubricants approved       |               |  |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 |  |
| 4 Weight (with oil charge)    | 6.55          | [kg] (14.44 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 | 220 V 50-60 Hz 1 ~ (Single phase) |                                    |
| 2 Starting device type                       | PTC                               |                                    |
| 2.1 Starting device                          | 7M220MC1/8EA17C1                  |                                    |
| 3 Start capacitor                            | -                                 | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                 | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM189KFBYY-53                    |                                    |
| 6 Start winding resistance                   | 19.75                             | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 33.45                             | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50/60 Hz)     | -                                 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz)  | -                                 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50/60 Hz)   | -                                 | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | IMTRO - IRAM - TUV                |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@220V50Hz |          |     | 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] |
| 325                           | 82       | 95  | 83                             | 0.69                             | 1.85   | 3.94                      | 0.99                                   | 1.15  |

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@220V60Hz |          |     | 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] |
| 393                           | 99       | 115 | 90                             | 1.20                             | 2.23   | 4.36                      | 1.10                                   | 1.28  |

### E - PERFORMANCE - CURVES

|                               |                            |          |                    |                                |                                       |                            |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|---------------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |                            |          | 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)                     | 237                        | 60       | 69                 | 63                             | 0.66                                  | 1.35                       | 3.40                      | 0.86      | 1.00  |
| -30 (-22)                     | 228                        | 58       | 67                 | 69                             | 0.67                                  | 1.29                       | 3.50                      | 0.88      | 1.03  |
| -25 (-13)                     | 294                        | 74       | 86                 | 75                             | 0.68                                  | 1.67                       | 4.18                      | 1.05      | 1.22  |
| -20 (- 4)                     | 422                        | 106      | 124                | 82                             | 0.69                                  | 2.40                       | 5.30                      | 1.34      | 1.55  |
| -15 (+ 5)                     | 597                        | 150      | 175                | 89                             | 0.70                                  | 3.41                       | 6.72                      | 1.69      | 1.97  |
| -10 (+14)                     | 806                        | 203      | 236                | 96                             | 0.72                                  | 4.62                       | 8.32                      | 2.10      | 2.44  |

|                               |                            |          |                    |                                |  |                            |                           |           |       |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |                            |          | 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)                     | 139                        | 35       | 41                 | 62                             | 0.66                                   | 0.78                       | 2.56                      | 0.64      | 0.75  |
| -30 (-22)                     | 194                        | 49       | 57                 | 70                             | 0.67                                   | 1.09                       | 3.08                      | 0.78      | 0.90  |
| -25 (-13)                     | 297                        | 75       | 87                 | 78                             | 0.68                                   | 1.69                       | 3.95                      | 1.00      | 1.16  |
| -20 (- 4)                     | 436                        | 110      | 128                | 86                             | 0.69                                   | 2.48                       | 5.03                      | 1.27      | 1.47  |
| -15 (+ 5)                     | 596                        | 150      | 175                | 94                             | 0.71                                   | 3.40                       | 6.19                      | 1.56      | 1.81  |
| -10 (+14)                     | 765                        | 193      | 224                | 103                            | 0.73                                   | 4.38                       | 7.29                      | 1.84      | 2.14  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V50Hz |                            | 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)                     | 135                        | 34                 | 40       | 61                          | 0.66                                   | 0.76                    | 2.30                      | 0.58     | 0.67      |       |
| -30 (-22)                     | 222                        | 56                 | 65       | 70                          | 0.67                                   | 1.26                    | 3.06                      | 0.77     | 0.90      |       |
| -25 (-13)                     | 331                        | 83                 | 97       | 80                          | 0.68                                   | 1.88                    | 3.93                      | 0.99     | 1.15      |       |
| -20 (- 4)                     | 449                        | 113                | 131      | 90                          | 0.70                                   | 2.56                    | 4.79                      | 1.21     | 1.41      |       |
| -15 (+ 5)                     | 562                        | 142                | 165      | 100                         | 0.72                                   | 3.21                    | 5.50                      | 1.39     | 1.61      |       |
| -10 (+14)                     | 658                        | 166                | 193      | 111                         | 0.75                                   | 3.77                    | 5.93                      | 1.49     | 1.74      |       |

| TEST CONDITIONS:<br>@220V50Hz |                            | 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)                     | 102                        | 26                 | 30       | 57                          | 0.65                                   | 0.57                    | 1.76                      | 0.44     | 0.51      |       |
| -30 (-22)                     | 187                        | 47                 | 55       | 68                          | 0.66                                   | 1.06                    | 2.56                      | 0.65     | 0.75      |       |
| -25 (-13)                     | 270                        | 68                 | 79       | 79                          | 0.68                                   | 1.53                    | 3.26                      | 0.82     | 0.96      |       |
| -20 (- 4)                     | 335                        | 84                 | 98       | 91                          | 0.70                                   | 1.91                    | 3.72                      | 0.94     | 1.09      |       |
| -15 (+ 5)                     | 370                        | 93                 | 108      | 103                         | 0.73                                   | 2.11                    | 3.79                      | 0.96     | 1.11      |       |
| -10 (+14)                     | 361                        | 91                 | 106      | 116                         | 0.76                                   | 2.06                    | 3.35                      | 0.84     | 0.98      |       |

| TEST CONDITIONS:<br>@220V60Hz |                            | 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)                     | 232                        | 58                 | 68       | 66                          | 0.56                                  | 1.31                    | 3.52                      | 0.89     | 1.03      |       |
| -30 (-22)                     | 311                        | 78                 | 91       | 75                          | 0.58                                  | 1.77                    | 4.17                      | 1.05     | 1.22      |       |
| -25 (-13)                     | 414                        | 104                | 121      | 84                          | 0.60                                  | 2.35                    | 4.94                      | 1.25     | 1.45      |       |
| -20 (- 4)                     | 541                        | 136                | 158      | 93                          | 0.63                                  | 3.08                    | 5.84                      | 1.47     | 1.71      |       |
| -15 (+ 5)                     | 693                        | 175                | 203      | 101                         | 0.65                                  | 3.96                    | 6.84                      | 1.72     | 2.00      |       |
| -10 (+14)                     | 873                        | 220                | 256      | 110                         | 0.68                                  | 5.00                    | 7.94                      | 2.00     | 2.33      |       |

| TEST CONDITIONS:<br>@220V60Hz |                            | 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)                     | 216                        | 54                 | 63       | 67                          | 0.56                                   | 1.22                    | 3.23                      | 0.81     | 0.95      |       |
| -30 (-22)                     | 297                        | 75                 | 87       | 78                          | 0.58                                   | 1.69                    | 3.84                      | 0.97     | 1.12      |       |
| -25 (-13)                     | 400                        | 101                | 117      | 88                          | 0.61                                   | 2.27                    | 4.52                      | 1.14     | 1.33      |       |
| -20 (- 4)                     | 525                        | 132                | 154      | 99                          | 0.64                                   | 2.99                    | 5.28                      | 1.33     | 1.55      |       |
| -15 (+ 5)                     | 675                        | 170                | 198      | 110                         | 0.68                                   | 3.85                    | 6.10                      | 1.54     | 1.79      |       |
| -10 (+14)                     | 850                        | 214                | 249      | 122                         | 0.72                                   | 4.87                    | 6.98                      | 1.76     | 2.04      |       |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V60Hz |       | 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) | 183                        | 46       | 54  | 66                                      | 0.56                          | 1.03                    | 2.76                      | 0.70      | 0.81  |
| -30                           | (-22) | 266                        | 67       | 78  | 79                                      | 0.59                          | 1.51                    | 3.36                      | 0.85      | 0.99  |
| -25                           | (-13) | 368                        | 93       | 108 | 92                                      | 0.62                          | 2.09                    | 4.00                      | 1.01      | 1.17  |
| -20                           | (- 4) | 491                        | 124      | 144 | 105                                     | 0.66                          | 2.79                    | 4.66                      | 1.17      | 1.37  |
| -15                           | (+ 5) | 637                        | 161      | 187 | 119                                     | 0.71                          | 3.64                    | 5.34                      | 1.34      | 1.56  |
| -10                           | (+14) | 807                        | 203      | 236 | 134                                     | 0.76                          | 4.62                    | 6.02                      | 1.52      | 1.77  |

| TEST CONDITIONS:<br>@220V60Hz |       | 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) | 137                        | 35       | 40  | 62                                      | 0.55                          | 0.77                    | 2.23                      | 0.56      | 0.65  |
| -30                           | (-22) | 220                        | 55       | 65  | 76                                      | 0.58                          | 1.25                    | 2.86                      | 0.72      | 0.84  |
| -25                           | (-13) | 321                        | 81       | 94  | 92                                      | 0.62                          | 1.82                    | 3.48                      | 0.88      | 1.02  |
| -20                           | (- 4) | 442                        | 111      | 129 | 108                                     | 0.67                          | 2.51                    | 4.08                      | 1.03      | 1.20  |
| -15                           | (+ 5) | 583                        | 147      | 171 | 126                                     | 0.73                          | 3.33                    | 4.66                      | 1.17      | 1.36  |
| -10                           | (+14) | 746                        | 188      | 219 | 144                                     | 0.80                          | 4.28                    | 5.19                      | 1.31      | 1.52  |

### F - EXTERNAL CHARACTERISTICS

|                         |                              |      |                          |
|-------------------------|------------------------------|------|--------------------------|
| 1 Base plate            | New Base Plate 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             | 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 30° up + 24° to Back |      |                          |
| 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 45° up + 45° to Back |      |                          |
| 3.4 Oil cooler (Copper) | No                           | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                 |      |                          |