

### COMPRESSOR DEFINITION

|                           |                |
|---------------------------|----------------|
| Designation               | EM T30CDP      |
| Nominal Voltage/Frequency | 100 V 50-60 Hz |
| Engineering Number        | 513306207      |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                   |                                   |             |
|------------------------------------|-----------------------------------|-----------------------------------|-------------|
| 1 Type                             | Hermetic reciprocating compressor |                                   |             |
| 2 Refrigerant                      | R-600a                            |                                   |             |
| 3 Nominal voltage and frequency    | 100 / 50-60                       | [ V / Hz ]                        |             |
| 4 Application type                 | Low-Medium-High Back Pressure     |                                   |             |
| 4.1 Evaporating temperature range  | -35°C to 15°C                     | (-31°F to 59°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) | -                                 | -                                 | -           |
| 8.2 LBP (43°C Ambient temperature) | Static                            | 85 to 110 V                       | 85 to 110 V |
| 8.3 HBP (32°C Ambient temperature) | Static                            | 85 to 110 V                       | 85 to 110 V |
| 8.4 HBP (43°C Ambient temperature) | -                                 | -                                 | -           |
| 9 Maximum condensing temperature   |                                   |                                   |             |
| 9.1 Operating                      | 6.9                               | [kgf/cm <sup>2</sup> ] (98 psig)  | / °C - °F   |
| 9.2 Peak                           | 7.8                               | [kgf/cm <sup>2</sup> ] (111 psig) | / °C - °F   |
| 10 Maximum winding temperature     | 130                               | [ °C ]                            |             |

### B - MECHANICAL DATA

|                               |                 |                                  |
|-------------------------------|-----------------|----------------------------------|
| 1 Commercial designation      | 1/8             | [hp]                             |
| 2 Displacement                | 4.50            | [cm <sup>3</sup> ] (0.275 cu.in) |
| 2.1 Bore [mm]                 | 21.000          |                                  |
| 2.2 Stroke [mm]               | 13.000          |                                  |
| 3 Lubricant charge            | 180             | [ml] (6.09 fl.oz.)               |
| 3.1 Lubricants approved       |                 |                                  |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO22 |                                  |
| 4 Weight (with oil charge)    | 7.2             | [kg] (15.87 lb.)                 |
| 5 Nitrogen charge             | -               | [kgf/cm <sup>2</sup> ]           |

### C - ELECTRICAL DATA

|  |                                    |                                    |
|--|------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 100 V 50-60 Hz 1 ~ (Single phase)  |                                    |
| 2 Starting device type                       | PTC                                |                                    |
| 2.1 Starting device                          | 8EA14C1/8EA14E62/8EA14E63/8EA14E64 |                                    |
| 3 Start capacitor                            | -                                  | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                  | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 5TM319LFBYY-73                     |                                    |
| 6 Start winding resistance                   | 6.35                               | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 5.46                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50/60 Hz)     | 9.00/8.40                          | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz)  | 1.72/1.54                          | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50/60 Hz)   | 1.98/1.84                          | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | CE - UKCA - VDE                    |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                                 |          |     |                            |                            |  |                                |  |       |
|---------------------------------|----------|-----|----------------------------|----------------------------|--|--------------------------------|--|-------|
| TEST CONDITIONS:<br>@100V50Hz   |          |     | ASHRAELBP32<br>Static      |                            | Evaporating temperature<br>(Condensing temperature |                                | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity (Qe)<br>+/- 5% |          |     | Input power (We)<br>+/- 5% | Electric current<br>+/- 5% | Mass flow rate<br>+/- 5%                           | Efficiency EER & COP<br>+/- 7% |  |       |
| [Btu/h]                         | [kcal/h] | [W] | [W]                        | [A]                        | [kg/h]   | [Btu/Wh]                       | [kcal/Wh]                              | [W/W] |
| 253                             | 64       | 74  | 59                         | 1.27                       | 0.79   | 4.27                           | 1.08                                   | 1.25  |

|                                 |          |     |                            |                            |  |                                |  |       |
|---------------------------------|----------|-----|----------------------------|----------------------------|--|--------------------------------|--|-------|
| TEST CONDITIONS:<br>@100V60Hz   |          |     | ASHRAELBP32<br>Static      |                            | Evaporating temperature<br>(Condensing temperature |                                | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity (Qe)<br>+/- 5% |          |     | Input power (We)<br>+/- 5% | Electric current<br>+/- 5% | Mass flow rate<br>+/- 5%                           | Efficiency EER & COP<br>+/- 7% |  |       |
| [Btu/h]                         | [kcal/h] | [W] | [W]                        | [A]                        | [kg/h]   | [Btu/Wh]                       | [kcal/Wh]                              | [W/W] |
| 320                             | 81       | 94  | 66                         | 1.11                       | 1.00   | 4.86                           | 1.22                                   | 1.42  |

### E - PERFORMANCE - CURVES

|                               |                                 |          |                    |                            |                                       |                          |                                |           |       |
|-------------------------------|---------------------------------|----------|--------------------|----------------------------|---------------------------------------|--------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS:<br>@100V50Hz |                                 |          | ASHRAE32<br>Static |                            | (Condensing temperature 35°C (+95°F)) |                          |                                |           |       |
| Evaporating temperature       | Cooling capacity (Qe)<br>+/- 5% |          |                    | Input power (We)<br>+/- 5% | Electric current<br>+/- 5%            | Mass flow rate<br>+/- 5% | Efficiency EER & COP<br>+/- 7% |           |       |
| °C (°F)                       | [Btu/h]                         | [kcal/h] | [W]                | [W]                        | [A]                                   | [kg/h]                   | [Btu/Wh]                       | [kcal/Wh] | [W/W] |
| -35 (-31)                     | 115                             | 29       | 34                 | 48                         | 1.24                                  | 0.36                     | 2.43                           | 0.61      | 0.71  |
| -30 (-22)                     | 156                             | 39       | 46                 | 51                         | 1.24                                  | 0.49                     | 3.10                           | 0.78      | 0.91  |
| -25 (-13)                     | 206                             | 52       | 60                 | 55                         | 1.25                                  | 0.65                     | 3.78                           | 0.95      | 1.11  |
| -20 (- 4)                     | 268                             | 67       | 78                 | 60                         | 1.28                                  | 0.84                     | 4.47                           | 1.13      | 1.31  |
| -15 (+ 5)                     | 341                             | 86       | 100                | 65                         | 1.30                                  | 1.07                     | 5.20                           | 1.31      | 1.52  |
| -10 (+14)                     | 427                             | 108      | 125                | 71                         | 1.33                                  | 1.35                     | 5.99                           | 1.51      | 1.75  |
| -5 (+23)                      | 527                             | 133      | 154                | 77                         | 1.36                                  | 1.67                     | 6.84                           | 1.72      | 2.00  |
| 0 (+32)                       | 642                             | 162      | 188                | 83                         | 1.39                                  | 2.03                     | 7.77                           | 1.96      | 2.28  |
| +5 (+41)                      | 772                             | 195      | 226                | 88                         | 1.42                                  | 2.46                     | 8.81                           | 2.22      | 2.58  |
| +10 (+50)                     | 920                             | 232      | 269                | 93                         | 1.43                                  | 2.94                     | 9.96                           | 2.51      | 2.92  |
| +15 (+59)                     | 1084                            | 273      | 318                | 96                         | 1.44                                  | 3.48                     | 11.24                          | 2.83      | 3.29  |

|                               |                                 |          |                    |                            |  |                          |                                |           |       |
|-------------------------------|---------------------------------|----------|--------------------|----------------------------|--|--------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS:<br>@100V50Hz |                                 |          | ASHRAE32<br>Static |                            | (Condensing temperature 45°C (+113°F)) |                          |                                |           |       |
| Evaporating temperature       | Cooling capacity (Qe)<br>+/- 5% |          |                    | Input power (We)<br>+/- 5% | Electric current<br>+/- 5%             | Mass flow rate<br>+/- 5% | Efficiency EER & COP<br>+/- 7% |           |       |
| °C (°F)                       | [Btu/h]                         | [kcal/h] | [W]                | [W]                        | [A]                                    | [kg/h]                   | [Btu/Wh]                       | [kcal/Wh] | [W/W] |
| -35 (-31)                     | 117                             | 29       | 34                 | 47                         | 1.24                                   | 0.37                     | 2.47                           | 0.62      | 0.72  |
| -30 (-22)                     | 157                             | 40       | 46                 | 51                         | 1.24                                   | 0.49                     | 3.10                           | 0.78      | 0.91  |
| -25 (-13)                     | 209                             | 53       | 61                 | 56                         | 1.26                                   | 0.66                     | 3.74                           | 0.94      | 1.10  |
| -20 (- 4)                     | 272                             | 69       | 80                 | 62                         | 1.28                                   | 0.86                     | 4.41                           | 1.11      | 1.29  |
| -15 (+ 5)                     | 349                             | 88       | 102                | 68                         | 1.31                                   | 1.10                     | 5.11                           | 1.29      | 1.50  |
| -10 (+14)                     | 439                             | 111      | 129                | 75                         | 1.35                                   | 1.38                     | 5.87                           | 1.48      | 1.72  |
| -5 (+23)                      | 545                             | 137      | 160                | 81                         | 1.38                                   | 1.72                     | 6.71                           | 1.69      | 1.97  |
| 0 (+32)                       | 666                             | 168      | 195                | 88                         | 1.42                                   | 2.11                     | 7.63                           | 1.92      | 2.24  |
| +5 (+41)                      | 804                             | 203      | 236                | 93                         | 1.45                                   | 2.56                     | 8.65                           | 2.18      | 2.54  |
| +10 (+50)                     | 960                             | 242      | 281                | 98                         | 1.47                                   | 3.07                     | 9.80                           | 2.47      | 2.87  |
| +15 (+59)                     | 1135                            | 286      | 332                | 102                        | 1.49                                   | 3.64                     | 11.08                          | 2.79      | 3.25  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@100V50Hz |                                 | ASHRAE32<br>Static |          |                            | (Condensing temperature 55°C (+131°F)) |                          |                                |          |           |       |
|-------------------------------|---------------------------------|--------------------|----------|----------------------------|--|--------------------------|--------------------------------|----------|-----------|-------|
| Evaporating temperature       | Cooling capacity (Qe)<br>+/- 5% |                    |          | Input power (We)<br>+/- 5% | Electric current<br>+/- 5%             | Mass flow rate<br>+/- 5% | Efficiency EER & COP<br>+/- 7% |          |           |       |
|                               | °C (°F)                         | [Btu/h]            | [kcal/h] | [W]                        | [W]                                    | [A]                      | [kg/h]                         | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 (-31)                     | 116                             | 29                 | 34       | 47                         | 1.23                                   | 0.36                     | 2.43                           | 0.61     | 0.71      |       |
| -30 (-22)                     | 159                             | 40                 | 47       | 52                         | 1.24                                   | 0.50                     | 3.04                           | 0.77     | 0.89      |       |
| -25 (-13)                     | 214                             | 54                 | 63       | 58                         | 1.26                                   | 0.67                     | 3.67                           | 0.93     | 1.08      |       |
| -20 (- 4)                     | 282                             | 71                 | 83       | 65                         | 1.30                                   | 0.88                     | 4.33                           | 1.09     | 1.27      |       |
| -15 (+ 5)                     | 364                             | 92                 | 107      | 72                         | 1.33                                   | 1.14                     | 5.03                           | 1.27     | 1.47      |       |
| -10 (+14)                     | 461                             | 116                | 135      | 79                         | 1.38                                   | 1.45                     | 5.79                           | 1.46     | 1.70      |       |
| -5 (+23)                      | 574                             | 145                | 168      | 86                         | 1.42                                   | 1.81                     | 6.63                           | 1.67     | 1.94      |       |
| 0 (+32)                       | 704                             | 177                | 206      | 93                         | 1.47                                   | 2.23                     | 7.56                           | 1.91     | 2.22      |       |
| +5 (+41)                      | 852                             | 215                | 250      | 99                         | 1.51                                   | 2.71                     | 8.60                           | 2.17     | 2.52      |       |
| +10 (+50)                     | 1019                            | 257                | 299      | 105                        | 1.54                                   | 3.26                     | 9.77                           | 2.46     | 2.86      |       |
| +15 (+59)                     | 1206                            | 304                | 353      | 109                        | 1.57                                   | 3.87                     | 11.07                          | 2.79     | 3.24      |       |

| TEST CONDITIONS:<br>@100V50Hz |                                 | ASHRAE32<br>Static |          |                            | (Condensing temperature 65°C (+149°F)) |                          |                                |          |           |       |
|-------------------------------|---------------------------------|--------------------|----------|----------------------------|--|--------------------------|--------------------------------|----------|-----------|-------|
| Evaporating temperature       | Cooling capacity (Qe)<br>+/- 5% |                    |          | Input power (We)<br>+/- 5% | Electric current<br>+/- 5%             | Mass flow rate<br>+/- 5% | Efficiency EER & COP<br>+/- 7% |          |           |       |
|                               | °C (°F)                         | [Btu/h]            | [kcal/h] | [W]                        | [W]                                    | [A]                      | [kg/h]                         | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 (-31)                     | 110                             | 28                 | 32       | 46                         | 1.21                                   | 0.34                     | 2.42                           | 0.61     | 0.71      |       |
| -30 (-22)                     | 157                             | 39                 | 46       | 52                         | 1.23                                   | 0.49                     | 3.04                           | 0.77     | 0.89      |       |
| -25 (-13)                     | 217                             | 55                 | 64       | 59                         | 1.26                                   | 0.68                     | 3.68                           | 0.93     | 1.08      |       |
| -20 (- 4)                     | 292                             | 74                 | 85       | 67                         | 1.30                                   | 0.92                     | 4.35                           | 1.10     | 1.28      |       |
| -15 (+ 5)                     | 382                             | 96                 | 112      | 75                         | 1.35                                   | 1.20                     | 5.07                           | 1.28     | 1.49      |       |
| -10 (+14)                     | 488                             | 123                | 143      | 83                         | 1.40                                   | 1.54                     | 5.86                           | 1.48     | 1.72      |       |
| -5 (+23)                      | 611                             | 154                | 179      | 91                         | 1.46                                   | 1.93                     | 6.73                           | 1.70     | 1.97      |       |
| 0 (+32)                       | 752                             | 190                | 220      | 98                         | 1.51                                   | 2.39                     | 7.69                           | 1.94     | 2.25      |       |
| +5 (+41)                      | 912                             | 230                | 267      | 104                        | 1.57                                   | 2.91                     | 8.77                           | 2.21     | 2.57      |       |
| +10 (+50)                     | 1093                            | 275                | 320      | 110                        | 1.62                                   | 3.49                     | 9.98                           | 2.51     | 2.92      |       |
| +15 (+59)                     | 1294                            | 326                | 379      | 114                        | 1.66                                   | 4.15                     | 11.33                          | 2.85     | 3.32      |       |

### F - EXTERNAL CHARACTERISTICS

|                         |                                       |      |                          |
|-------------------------|---------------------------------------|------|--------------------------|
| 1 Base plate            | European Standard EG/F/AMEM Version 2 |      |                          |
| 2 Tray holder           | Yes                                   |      |                          |
| 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 parallel BP+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                          |      |                          |