

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | FM FT413U       |
| Nominal Voltage/Frequency | 230 V 60-150 Hz |
| Engineering Number        | 513805020       |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |  |                                   |           |
|------------------------------------|--|-----------------------------------|-----------|
| 1 Type                             | Hermetic reciprocating compressor                                  |                                   |           |
| 2 Refrigerant                      | R-290  |                                   |           |
| 3 Nominal voltage and frequency    | 230 / 60-150   | [ V / Hz ]                        |           |
| 4 Application type                 | Low-Medium Back Pressure (Light Commercial - Curves until T.Evap - |                                   |           |
| 4.1 Evaporating temperature range  | -40°C to 0°C   | (-40°F to 32°F)                   |           |
| 5 Motor type                       | BPM  |                                   |           |
| 6 Starting torque                  | LST/HST - Low/High starting torque                                 |                                   |           |
| 7 Expansion device                 | Capillary tube or Expansion valve                                  |                                   |           |
| 8 Compressor cooling               | Operating voltage range  |                                   |           |
|                                    |  | 50 Hz                             | 60 Hz     |
| 8.1 LBP (32°C Ambient temperature) | -  | -                                 | -         |
| 8.2 LBP (43°C Ambient temperature) | -  | -                                 | -         |
| 8.3 HBP (32°C Ambient temperature) | -  | -                                 | -         |
| 8.4 HBP (43°C Ambient temperature) | -  | -                                 | -         |
| 9 Maximum condensing temperature   |  |                                   |           |
| 9.1 Operating                      | 18.4   | [kgf/cm <sup>2</sup> ] (262 psig) | / °C - °F |
| 9.2 Peak                           | 20.6   | [kgf/cm <sup>2</sup> ] (293 psig) | / °C - °F |
| 10 Maximum winding temperature     | 130  | [ °C ]                            |           |

### B - MECHANICAL DATA

|                               |               |  |
|-------------------------------|---------------|--|
| 1 Commercial designation      | 1             | [hp]                                       |
| 2 Displacement                | 12.92         | [cm <sup>3</sup> ] (0.788 cu.in)           |
| 2.1 Bore [mm]                 | 28.000        |  |
| 2.2 Stroke [mm]               | 21.000        |  |
| 3 Lubricant charge            | 430           | [ml] (14.54 fl.oz.)                        |
| 3.1 Lubricants approved       |               |  |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 |  |
| 4 Weight (with oil charge)    | 10.87         | [kg] (23.96 lb.)                           |
| 5 Nitrogen charge             | 0.2 to 0.3    | [kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig) |

### C - ELECTRICAL DATA

|  |                                   |                                    |
|--|-----------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 230 V 60-150 Hz 3 ~ (Three phase) |                                    |
| 2 Starting device type                       | Inverter                          |                                    |
| 2.1 Starting device                          | CF10C01 M 0.1 X                   |                                    |
| 3 Start capacitor                            | -                                 | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                 | [µF(VAC minimum)]                  |
| 5 Motor protection                           | CF10C01 M 0.1 XX A Y              |                                    |
| 6 Start winding resistance                   | 4.30                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 4.30                              | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50/60 Hz)     | 6.50/6.50                         | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz)  | 2.00                              | [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             |                                   |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|   |          |     |                                  |                               |   |                           |  |       |
|---|----------|-----|----------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@220V1800RPM</b> |          |     | <b>ASHRAELBP32</b><br><b>Fan</b> |                               | Evaporating temperature<br>(Condensing temperature) |                           | <b>-23.3°C (-9.94°F)</b><br><b>54.4°C (129.92°F)</b> |       |
| 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] |
| 1376                                    | 347      | 403 | 229                              | 1.10                          | 4.10  | 6.02                      | 1.52   | 1.76  |

|   |          |     |                                  |                               |   |                           |  |       |
|---|----------|-----|----------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@220V2400RPM</b> |          |     | <b>ASHRAELBP32</b><br><b>Fan</b> |                               | Evaporating temperature<br>(Condensing temperature) |                           | <b>-23.3°C (-9.94°F)</b><br><b>54.4°C (129.92°F)</b> |       |
| 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] |
| 1812                                    | 457      | 531 | 298                              | 1.45                          | 5.39  | 6.08                      | 1.53   | 1.78  |

|   |          |     |                                  |                               |   |                           |  |       |
|---|----------|-----|----------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@220V3000RPM</b> |          |     | <b>ASHRAELBP32</b><br><b>Fan</b> |                               | Evaporating temperature<br>(Condensing temperature) |                           | <b>-23.3°C (-9.94°F)</b><br><b>54.4°C (129.92°F)</b> |       |
| 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] |
| 2328                                    | 587      | 682 | 379                              | 1.76                          | 6.93  | 6.15                      | 1.55   | 1.80  |

|   |          |     |                                  |                               |   |                           |  |       |
|---|----------|-----|----------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@220V3600RPM</b> |          |     | <b>ASHRAELBP32</b><br><b>Fan</b> |                               | Evaporating temperature<br>(Condensing temperature) |                           | <b>-23.3°C (-9.94°F)</b><br><b>54.4°C (129.92°F)</b> |       |
| 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] |
| 2652                                    | 668      | 777 | 441                              | 2.08                          | 7.89  | 6.01                      | 1.51   | 1.76  |

|   |          |     |                                  |                               |   |                           |  |       |
|---|----------|-----|----------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@220V4500RPM</b> |          |     | <b>ASHRAELBP32</b><br><b>Fan</b> |                               | Evaporating temperature<br>(Condensing temperature) |                           | <b>-23.3°C (-9.94°F)</b><br><b>54.4°C (129.92°F)</b> |       |
| 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] |
| 3407                                    | 859      | 998 | 574                              | 2.64                          | 10.14   | 5.94                      | 1.50   | 1.74  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V1800RPM |                            | ASHRAE32<br>Fan |         |                             | (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] |
| -40                              | (-40)                      | 623             | 157     | 183                         | 113                                   | 0.70                    | 1.84                      | 5.56   | 1.40     | 1.63      |
| -35                              | (-31)                      | 861             | 217     | 252                         | 139                                   | 0.79                    | 2.55                      | 6.12   | 1.54     | 1.79      |
| -30                              | (-22)                      | 1119            | 282     | 328                         | 163                                   | 0.88                    | 3.32                      | 6.82   | 1.72     | 2.00      |
| -25                              | (-13)                      | 1408            | 355     | 413                         | 183                                   | 0.97                    | 4.19                      | 7.67   | 1.93     | 2.25      |
| -20                              | (- 4)                      | 1739            | 438     | 510                         | 202                                   | 1.05                    | 5.19                      | 8.70   | 2.19     | 2.55      |
| -15                              | (+ 5)                      | 2123            | 535     | 622                         | 217                                   | 1.13                    | 6.36                      | 9.91   | 2.50     | 2.90      |
| -10                              | (+14)                      | 2570            | 648     | 753                         | 230                                   | 1.19                    | 7.73                      | 11.33  | 2.85     | 3.32      |
| -5                               | (+23)                      | 3091            | 779     | 906                         | 240                                   | 1.24                    | 9.35                      | 12.96  | 3.27     | 3.80      |
| 0                                | (+32)                      | 3697            | 932     | 1083                        | 247                                   | 1.27                    | 11.24                     | 14.83  | 3.74     | 4.35      |

| TEST CONDITIONS:<br>@220V1800RPM |                            | ASHRAE32<br>Fan |         |                             | (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] |
| -40                              | (-40)                      | 608             | 153     | 178                         | 124                                    | 0.73                    | 1.79                      | 4.96   | 1.25     | 1.45      |
| -35                              | (-31)                      | 820             | 207     | 240                         | 151                                    | 0.82                    | 2.43                      | 5.41   | 1.36     | 1.59      |
| -30                              | (-22)                      | 1061            | 267     | 311                         | 176                                    | 0.93                    | 3.15                      | 5.96   | 1.50     | 1.75      |
| -25                              | (-13)                      | 1342            | 338     | 393                         | 201                                    | 1.04                    | 3.99                      | 6.61   | 1.67     | 1.94      |
| -20                              | (- 4)                      | 1672            | 421     | 490                         | 225                                    | 1.15                    | 4.99                      | 7.39   | 1.86     | 2.17      |
| -15                              | (+ 5)                      | 2063            | 520     | 605                         | 247                                    | 1.26                    | 6.18                      | 8.30   | 2.09     | 2.43      |
| -10                              | (+14)                      | 2526            | 637     | 740                         | 269                                    | 1.37                    | 7.60                      | 9.38   | 2.36     | 2.75      |
| -5                               | (+23)                      | 3071            | 774     | 900                         | 290                                    | 1.47                    | 9.29                      | 10.62  | 2.68     | 3.11      |
| 0                                | (+32)                      | 3709            | 935     | 1087                        | 310                                    | 1.55                    | 11.28                     | 12.04  | 3.04     | 3.53      |

| TEST CONDITIONS:<br>@220V1800RPM |                            | ASHRAE32<br>Fan |         |                             | (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] |
| -40                              | (-40)                      | 557             | 140     | 163                         | 129                                    | 0.74                    | 1.64                      | 4.35   | 1.10     | 1.28      |
| -35                              | (-31)                      | 751             | 189     | 220                         | 158                                    | 0.85                    | 2.22                      | 4.79   | 1.21     | 1.40      |
| -30                              | (-22)                      | 981             | 247     | 287                         | 187                                    | 0.97                    | 2.91                      | 5.26   | 1.33     | 1.54      |
| -25                              | (-13)                      | 1258            | 317     | 369                         | 217                                    | 1.11                    | 3.74                      | 5.79   | 1.46     | 1.70      |
| -20                              | (- 4)                      | 1594            | 402     | 467                         | 247                                    | 1.26                    | 4.75                      | 6.40   | 1.61     | 1.88      |
| -15                              | (+ 5)                      | 1998            | 503     | 585                         | 279                                    | 1.41                    | 5.98                      | 7.10   | 1.79     | 2.08      |
| -10                              | (+14)                      | 2482            | 626     | 727                         | 311                                    | 1.57                    | 7.47                      | 7.91   | 1.99     | 2.32      |
| -5                               | (+23)                      | 3057            | 770     | 896                         | 344                                    | 1.72                    | 9.24                      | 8.84   | 2.23     | 2.59      |
| 0                                | (+32)                      | 3733            | 941     | 1094                        | 379                                    | 1.87                    | 11.35                     | 9.91   | 2.50     | 2.90      |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V1800RPM |       | ASHRAE32<br>Fan            |          |      | (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] |
| -40                              | (-40) | 472                        | 119      | 138  | 128                                    | 0.73                          | 1.39                    | 3.61                      | 0.91      | 1.06  |
| -35                              | (-31) | 652                        | 164      | 191  | 160                                    | 0.86                          | 1.93                    | 4.10                      | 1.03      | 1.20  |
| -30                              | (-22) | 877                        | 221      | 257  | 194                                    | 1.01                          | 2.60                    | 4.59                      | 1.16      | 1.34  |
| -25                              | (-13) | 1157                       | 292      | 339  | 231                                    | 1.18                          | 3.44                    | 5.08                      | 1.28      | 1.49  |
| -20                              | (- 4) | 1503                       | 379      | 441  | 271                                    | 1.37                          | 4.48                    | 5.61                      | 1.41      | 1.64  |
| -15                              | (+ 5) | 1927                       | 486      | 565  | 313                                    | 1.57                          | 5.77                    | 6.17                      | 1.56      | 1.81  |
| -10                              | (+14) | 2439                       | 615      | 715  | 357                                    | 1.78                          | 7.34                    | 6.80                      | 1.71      | 1.99  |
| -5                               | (+23) | 3049                       | 768      | 893  | 405                                    | 1.99                          | 9.22                    | 7.50                      | 1.89      | 2.20  |
| 0                                | (+32) | 3769                       | 950      | 1104 | 455                                    | 2.21                          | 11.45                   | 8.29                      | 2.09      | 2.43  |

| TEST CONDITIONS:<br>@220V3000RPM |       | ASHRAE32<br>Fan            |          |      | (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] |
| -40                              | (-40) | 1092                       | 275      | 320  | 209                                   | 1.11                          | 3.22                    | 5.22                      | 1.32      | 1.53  |
| -35                              | (-31) | 1435                       | 362      | 420  | 245                                   | 1.25                          | 4.25                    | 5.85                      | 1.47      | 1.72  |
| -30                              | (-22) | 1841                       | 464      | 540  | 281                                   | 1.40                          | 5.46                    | 6.55                      | 1.65      | 1.92  |
| -25                              | (-13) | 2318                       | 584      | 679  | 316                                   | 1.56                          | 6.89                    | 7.33                      | 1.85      | 2.15  |
| -20                              | (- 4) | 2873                       | 724      | 842  | 350                                   | 1.71                          | 8.57                    | 8.21                      | 2.07      | 2.41  |
| -15                              | (+ 5) | 3512                       | 885      | 1029 | 383                                   | 1.86                          | 10.52                   | 9.20                      | 2.32      | 2.70  |
| -10                              | (+14) | 4243                       | 1069     | 1243 | 412                                   | 1.99                          | 12.77                   | 10.32                     | 2.60      | 3.02  |
| -5                               | (+23) | 5073                       | 1278     | 1486 | 439                                   | 2.11                          | 15.34                   | 11.59                     | 2.92      | 3.40  |
| 0                                | (+32) | 6009                       | 1514     | 1761 | 460                                   | 2.19                          | 18.27                   | 13.02                     | 3.28      | 3.81  |

| TEST CONDITIONS:<br>@220V3000RPM |       | ASHRAE32<br>Fan            |          |      | (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] |
| -40                              | (-40) | 1042                       | 263      | 305  | 219                                    | 1.14                          | 3.08                    | 4.77                      | 1.20      | 1.40  |
| -35                              | (-31) | 1379                       | 348      | 404  | 259                                    | 1.30                          | 4.08                    | 5.33                      | 1.34      | 1.56  |
| -30                              | (-22) | 1779                       | 448      | 521  | 300                                    | 1.47                          | 5.28                    | 5.92                      | 1.49      | 1.73  |
| -25                              | (-13) | 2249                       | 567      | 659  | 342                                    | 1.66                          | 6.69                    | 6.55                      | 1.65      | 1.92  |
| -20                              | (- 4) | 2795                       | 704      | 819  | 384                                    | 1.85                          | 8.34                    | 7.26                      | 1.83      | 2.13  |
| -15                              | (+ 5) | 3426                       | 863      | 1004 | 425                                    | 2.03                          | 10.26                   | 8.05                      | 2.03      | 2.36  |
| -10                              | (+14) | 4148                       | 1045     | 1215 | 463                                    | 2.21                          | 12.48                   | 8.94                      | 2.25      | 2.62  |
| -5                               | (+23) | 4968                       | 1252     | 1456 | 500                                    | 2.37                          | 15.02                   | 9.95                      | 2.51      | 2.91  |
| 0                                | (+32) | 5894                       | 1485     | 1727 | 533                                    | 2.50                          | 17.92                   | 11.08                     | 2.79      | 3.25  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V3000RPM |                            | ASHRAE32<br>Fan |          |                             | (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] |
| -40 (-40)                        | 936                        | 236             | 274      | 218                         | 1.14                                   | 2.76                    | 4.30                      | 1.08     | 1.26      |       |
| -35 (-31)                        | 1271                       | 320             | 372      | 264                         | 1.32                                   | 3.76                    | 4.82                      | 1.22     | 1.41      |       |
| -30 (-22)                        | 1668                       | 420             | 489      | 312                         | 1.52                                   | 4.95                    | 5.35                      | 1.35     | 1.57      |       |
| -25 (-13)                        | 2134                       | 538             | 625      | 362                         | 1.74                                   | 6.34                    | 5.90                      | 1.49     | 1.73      |       |
| -20 (- 4)                        | 2676                       | 674             | 784      | 412                         | 1.97                                   | 7.98                    | 6.48                      | 1.63     | 1.90      |       |
| -15 (+ 5)                        | 3302                       | 832             | 968      | 462                         | 2.19                                   | 9.89                    | 7.12                      | 1.80     | 2.09      |       |
| -10 (+14)                        | 4018                       | 1013            | 1177     | 512                         | 2.41                                   | 12.09                   | 7.83                      | 1.97     | 2.30      |       |
| -5 (+23)                         | 4832                       | 1218            | 1416     | 559                         | 2.62                                   | 14.61                   | 8.63                      | 2.17     | 2.53      |       |
| 0 (+32)                          | 5750                       | 1449            | 1685     | 605                         | 2.81                                   | 17.48                   | 9.52                      | 2.40     | 2.79      |       |

| TEST CONDITIONS:<br>@220V3000RPM |                            | ASHRAE32<br>Fan |          |                             | (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] |
| -40 (-40)                        | 775                        | 195             | 227      | 208                         | 1.11                                   | 2.29                    | 3.71                      | 0.94     | 1.09      |       |
| -35 (-31)                        | 1111                       | 280             | 326      | 261                         | 1.32                                   | 3.29                    | 4.26                      | 1.07     | 1.25      |       |
| -30 (-22)                        | 1508                       | 380             | 442      | 317                         | 1.55                                   | 4.47                    | 4.77                      | 1.20     | 1.40      |       |
| -25 (-13)                        | 1974                       | 497             | 578      | 375                         | 1.81                                   | 5.87                    | 5.28                      | 1.33     | 1.55      |       |
| -20 (- 4)                        | 2515                       | 634             | 737      | 435                         | 2.07                                   | 7.50                    | 5.80                      | 1.46     | 1.70      |       |
| -15 (+ 5)                        | 3139                       | 791             | 920      | 496                         | 2.34                                   | 9.40                    | 6.33                      | 1.60     | 1.86      |       |
| -10 (+14)                        | 3853                       | 971             | 1129     | 557                         | 2.61                                   | 11.59                   | 6.91                      | 1.74     | 2.02      |       |
| -5 (+23)                         | 4663                       | 1175            | 1366     | 617                         | 2.87                                   | 14.10                   | 7.54                      | 1.90     | 2.21      |       |
| 0 (+32)                          | 5578                       | 1406            | 1634     | 676                         | 3.12                                   | 16.95                   | 8.25                      | 2.08     | 2.42      |       |

| TEST CONDITIONS:<br>@220V3600RPM |                            | ASHRAE32<br>Fan |          |                             | (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] |
| -40 (-40)                        | 1230                       | 310             | 360      | 256                         | 1.35                                  | 3.63                    | 4.83                      | 1.22     | 1.42      |       |
| -35 (-31)                        | 1649                       | 416             | 483      | 292                         | 1.45                                  | 4.88                    | 5.61                      | 1.41     | 1.64      |       |
| -30 (-22)                        | 2146                       | 541             | 629      | 336                         | 1.63                                  | 6.36                    | 6.34                      | 1.60     | 1.86      |       |
| -25 (-13)                        | 2732                       | 688             | 801      | 386                         | 1.86                                  | 8.12                    | 7.07                      | 1.78     | 2.07      |       |
| -20 (- 4)                        | 3418                       | 861             | 1002     | 436                         | 2.09                                  | 10.20                   | 7.86                      | 1.98     | 2.30      |       |
| -15 (+ 5)                        | 4216                       | 1062            | 1235     | 484                         | 2.31                                  | 12.63                   | 8.76                      | 2.21     | 2.57      |       |
| -10 (+14)                        | 5136                       | 1294            | 1505     | 526                         | 2.49                                  | 15.46                   | 9.84                      | 2.48     | 2.88      |       |
| -5 (+23)                         | 6190                       | 1560            | 1814     | 558                         | 2.58                                  | 18.72                   | 11.14                     | 2.81     | 3.26      |       |
| 0 (+32)                          | 7388                       | 1862            | 2165     | 577                         | 2.57                                  | 22.46                   | 12.72                     | 3.21     | 3.73      |       |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V3600RPM |       | ASHRAE32<br>Fan            |          |      | (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] |
| -40                              | (-40) | 1167                       | 294      | 342  | 266                                    | 1.43                          | 3.45                    | 4.41                      | 1.11      | 1.29  |
| -35                              | (-31) | 1562                       | 394      | 458  | 303                                    | 1.52                          | 4.62                    | 5.13                      | 1.29      | 1.50  |
| -30                              | (-22) | 2033                       | 512      | 596  | 351                                    | 1.70                          | 6.03                    | 5.76                      | 1.45      | 1.69  |
| -25                              | (-13) | 2592                       | 653      | 759  | 405                                    | 1.93                          | 7.71                    | 6.37                      | 1.61      | 1.87  |
| -20                              | (- 4) | 3250                       | 819      | 952  | 462                                    | 2.19                          | 9.70                    | 7.01                      | 1.77      | 2.05  |
| -15                              | (+ 5) | 4018                       | 1013     | 1177 | 519                                    | 2.44                          | 12.04                   | 7.73                      | 1.95      | 2.26  |
| -10                              | (+14) | 4908                       | 1237     | 1438 | 571                                    | 2.65                          | 14.77                   | 8.59                      | 2.16      | 2.52  |
| -5                               | (+23) | 5930                       | 1494     | 1738 | 616                                    | 2.80                          | 17.93                   | 9.64                      | 2.43      | 2.83  |
| 0                                | (+32) | 7096                       | 1788     | 2079 | 649                                    | 2.85                          | 21.57                   | 10.95                     | 2.76      | 3.21  |

| TEST CONDITIONS:<br>@220V3600RPM |       | ASHRAE32<br>Fan            |          |      | (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] |
| -40                              | (-40) | 1093                       | 275      | 320  | 277                                    | 1.47                          | 3.23                    | 3.97                      | 1.00      | 1.16  |
| -35                              | (-31) | 1460                       | 368      | 428  | 313                                    | 1.56                          | 4.32                    | 4.67                      | 1.18      | 1.37  |
| -30                              | (-22) | 1903                       | 479      | 558  | 363                                    | 1.75                          | 5.64                    | 5.26                      | 1.32      | 1.54  |
| -25                              | (-13) | 2432                       | 613      | 713  | 421                                    | 2.00                          | 7.23                    | 5.78                      | 1.46      | 1.69  |
| -20                              | (- 4) | 3060                       | 771      | 897  | 484                                    | 2.28                          | 9.13                    | 6.31                      | 1.59      | 1.85  |
| -15                              | (+ 5) | 3796                       | 957      | 1112 | 549                                    | 2.57                          | 11.37                   | 6.88                      | 1.73      | 2.02  |
| -10                              | (+14) | 4653                       | 1172     | 1363 | 611                                    | 2.83                          | 14.00                   | 7.57                      | 1.91      | 2.22  |
| -5                               | (+23) | 5641                       | 1421     | 1653 | 668                                    | 3.04                          | 17.06                   | 8.42                      | 2.12      | 2.47  |
| 0                                | (+32) | 6771                       | 1706     | 1984 | 716                                    | 3.16                          | 20.58                   | 9.49                      | 2.39      | 2.78  |

| TEST CONDITIONS:<br>@220V3600RPM |       | ASHRAE32<br>Fan            |          |      | (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] |
| -40                              | (-40) | 1007                       | 254      | 295  | 286                                    | 1.47                          | 2.97                    | 3.47                      | 0.87      | 1.02  |
| -35                              | (-31) | 1344                       | 339      | 394  | 323                                    | 1.57                          | 3.98                    | 4.19                      | 1.06      | 1.23  |
| -30                              | (-22) | 1756                       | 443      | 515  | 373                                    | 1.77                          | 5.21                    | 4.76                      | 1.20      | 1.39  |
| -25                              | (-13) | 2254                       | 568      | 660  | 435                                    | 2.04                          | 6.70                    | 5.24                      | 1.32      | 1.54  |
| -20                              | (- 4) | 2848                       | 718      | 834  | 503                                    | 2.36                          | 8.49                    | 5.69                      | 1.43      | 1.67  |
| -15                              | (+ 5) | 3550                       | 895      | 1040 | 575                                    | 2.70                          | 10.63                   | 6.17                      | 1.55      | 1.81  |
| -10                              | (+14) | 4371                       | 1101     | 1281 | 647                                    | 3.02                          | 13.15                   | 6.72                      | 1.69      | 1.97  |
| -5                               | (+23) | 5322                       | 1341     | 1560 | 716                                    | 3.30                          | 16.09                   | 7.40                      | 1.87      | 2.17  |
| 0                                | (+32) | 6415                       | 1617     | 1880 | 777                                    | 3.49                          | 19.49                   | 8.28                      | 2.09      | 2.43  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V4500RPM |       | ASHRAE32<br>Fan            |          |      | (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] |
| -40                              | (-40) | 1667                       | 420      | 488  | 333                                   | 1.67                          | 4.93                    | 4.97                      | 1.25      | 1.46  |
| -35                              | (-31) | 2076                       | 523      | 608  | 383                                   | 1.88                          | 6.14                    | 5.48                      | 1.38      | 1.60  |
| -30                              | (-22) | 2606                       | 657      | 764  | 433                                   | 2.09                          | 7.72                    | 6.07                      | 1.53      | 1.78  |
| -25                              | (-13) | 3259                       | 821      | 955  | 484                                   | 2.32                          | 9.69                    | 6.74                      | 1.70      | 1.98  |
| -20                              | (- 4) | 4038                       | 1018     | 1183 | 536                                   | 2.55                          | 12.05                   | 7.49                      | 1.89      | 2.20  |
| -15                              | (+ 5) | 4944                       | 1246     | 1449 | 590                                   | 2.77                          | 14.82                   | 8.31                      | 2.10      | 2.44  |
| -10                              | (+14) | 5980                       | 1507     | 1752 | 645                                   | 2.98                          | 18.00                   | 9.20                      | 2.32      | 2.70  |
| -5                               | (+23) | 7148                       | 1801     | 2095 | 703                                   | 3.17                          | 21.62                   | 10.15                     | 2.56      | 2.97  |
| 0                                | (+32) | 8450                       | 2129     | 2476 | 762                                   | 3.34                          | 25.69                   | 11.15                     | 2.81      | 3.27  |

| TEST CONDITIONS:<br>@220V4500RPM |       | ASHRAE32<br>Fan            |          |      | (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] |
| -40                              | (-40) | 1552                       | 391      | 455  | 334                                    | 1.65                          | 4.58                    | 4.62                      | 1.16      | 1.35  |
| -35                              | (-31) | 2016                       | 508      | 591  | 399                                    | 1.92                          | 5.96                    | 5.09                      | 1.28      | 1.49  |
| -30                              | (-22) | 2575                       | 649      | 755  | 461                                    | 2.19                          | 7.63                    | 5.63                      | 1.42      | 1.65  |
| -25                              | (-13) | 3232                       | 814      | 947  | 521                                    | 2.46                          | 9.61                    | 6.23                      | 1.57      | 1.83  |
| -20                              | (- 4) | 3988                       | 1005     | 1168 | 579                                    | 2.72                          | 11.90                   | 6.90                      | 1.74      | 2.02  |
| -15                              | (+ 5) | 4845                       | 1221     | 1420 | 635                                    | 2.97                          | 14.51                   | 7.63                      | 1.92      | 2.24  |
| -10                              | (+14) | 5807                       | 1463     | 1701 | 690                                    | 3.19                          | 17.47                   | 8.41                      | 2.12      | 2.46  |
| -5                               | (+23) | 6874                       | 1732     | 2014 | 743                                    | 3.39                          | 20.79                   | 9.23                      | 2.33      | 2.70  |
| 0                                | (+32) | 8049                       | 2028     | 2359 | 796                                    | 3.55                          | 24.47                   | 10.09                     | 2.54      | 2.96  |

| TEST CONDITIONS:<br>@220V4500RPM |       | ASHRAE32<br>Fan            |          |      | (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] |
| -40                              | (-40) | 1346                       | 339      | 394  | 318                                    | 1.62                          | 3.97                    | 4.21                      | 1.06      | 1.23  |
| -35                              | (-31) | 1877                       | 473      | 550  | 403                                    | 1.95                          | 5.55                    | 4.64                      | 1.17      | 1.36  |
| -30                              | (-22) | 2477                       | 624      | 726  | 482                                    | 2.28                          | 7.34                    | 5.13                      | 1.29      | 1.50  |
| -25                              | (-13) | 3148                       | 793      | 922  | 556                                    | 2.60                          | 9.36                    | 5.67                      | 1.43      | 1.66  |
| -20                              | (- 4) | 3893                       | 981      | 1141 | 624                                    | 2.90                          | 11.61                   | 6.26                      | 1.58      | 1.83  |
| -15                              | (+ 5) | 4713                       | 1188     | 1381 | 687                                    | 3.18                          | 14.11                   | 6.89                      | 1.74      | 2.02  |
| -10                              | (+14) | 5611                       | 1414     | 1644 | 746                                    | 3.43                          | 16.88                   | 7.56                      | 1.90      | 2.22  |
| -5                               | (+23) | 6590                       | 1661     | 1931 | 800                                    | 3.64                          | 19.92                   | 8.26                      | 2.08      | 2.42  |
| 0                                | (+32) | 7650                       | 1928     | 2242 | 850                                    | 3.81                          | 23.25                   | 8.98                      | 2.26      | 2.63  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V4500RPM |       | ASHRAE32<br>Fan            |          |      | (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] |
| -40                              | (-40) | 1050                       | 265      | 308  | 285                                     | 1.56                          | 3.10                    | 3.77                      | 0.95      | 1.10  |
| -35                              | (-31) | 1659                       | 418      | 486  | 394                                     | 1.97                          | 4.91                    | 4.17                      | 1.05      | 1.22  |
| -30                              | (-22) | 2311                       | 582      | 677  | 495                                     | 2.36                          | 6.86                    | 4.60                      | 1.16      | 1.35  |
| -25                              | (-13) | 3009                       | 758      | 882  | 586                                     | 2.74                          | 8.95                    | 5.08                      | 1.28      | 1.49  |
| -20                              | (- 4) | 3754                       | 946      | 1100 | 669                                     | 3.09                          | 11.20                   | 5.59                      | 1.41      | 1.64  |
| -15                              | (+ 5) | 4549                       | 1146     | 1333 | 744                                     | 3.41                          | 13.62                   | 6.13                      | 1.54      | 1.80  |
| -10                              | (+14) | 5396                       | 1360     | 1581 | 811                                     | 3.69                          | 16.23                   | 6.69                      | 1.69      | 1.96  |
| -5                               | (+23) | 6296                       | 1587     | 1845 | 870                                     | 3.92                          | 19.03                   | 7.26                      | 1.83      | 2.13  |
| 0                                | (+32) | 7253                       | 1828     | 2125 | 923                                     | 4.10                          | 22.04                   | 7.84                      | 1.98      | 2.30  |



### F - EXTERNAL CHARACTERISTICS

|                         |                               |      |                          |
|-------------------------|-------------------------------|------|--------------------------|
| 1 Base plate            | Universal EG/F/AMEM version 2 |      |                          |
| 2 Tray holder           | No                            |      |                          |
| 3 Connectors            |                               |      |                          |
| 3.1 SUCTION             | 8.2 +0.12/-0.08               | [mm] | (0.323" +0.005"/-0.003") |
| 3.1.1 Material          | Copper                        |      |                          |
| 3.1.2 Shape             | Straight                      |      |                          |
| 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             | 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                  |      |                          |