

### COMPRESSOR DEFINITION

|                           |                        |
|---------------------------|------------------------|
| Designation               | <b>VEM B11C</b>        |
| Nominal Voltage/Frequency | <b>230 V 53-150 Hz</b> |
| Engineering Number        | <b>513906037</b>       |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|  |                                   |                                   |           |
|--|-----------------------------------|-----------------------------------|-----------|
| 1 Type                                     | Hermetic reciprocating compressor |                                   |           |
| 2 Refrigerant                              | R-600a                            |                                   |           |
| 3 Nominal voltage and frequency            | 230 / 53-150                      | [ 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                               | BPM                               |                                   |           |
| 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                            | -                                 | -         |
| 8.2 LBP (43°C Ambient temperature)         | -                                 | -                                 | -         |
| 8.3 HBP (32°C Ambient temperature)         | -                                 | -                                 | -         |
| 8.4 HBP (43°C Ambient temperature)         | -                                 | -                                 | -         |
| 9 Maximum condensing pressures/temperature |                                   |                                   |           |
| 9.1 Operating (gauge)                      | 6.9                               | [kgf/cm <sup>2</sup> ] (98 psig)  | / °C - °F |
| 9.2 Peak (gauge)                           | 7.8                               | [kgf/cm <sup>2</sup> ] (111 psig) | / °C - °F |
| 10 Maximum winding temperature             | 130                               | [ °C ]                            |           |

### B - MECHANICAL DATA

|                               |                |                                  |
|-------------------------------|----------------|----------------------------------|
| 1 Commercial designation      |                | [hp]                             |
| 2 Displacement                | 11.14          | [cm <sup>3</sup> ] (0.680 cu.in) |
| 2.1 Bore [mm]                 | 26.000         |                                  |
| 2.2 Stroke [mm]               | 21.000         |                                  |
| 3 Lubricant charge            | 210            | [ml] (7.10 fl.oz.)               |
| 3.1 Lubricants approved       |                |                                  |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO5 |                                  |
| 4 Weight (with oil charge)    | 7.63           | [kg] (16.82 lb.)                 |
| 5 Nitrogen charge             | -              | [kgf/cm <sup>2</sup> ]           |

### C - ELETRICAL DATA

|  |                                   |                                    |
|--|-----------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 230 V 53-150 Hz 3 ~ (Three phase) |                                    |
| 2 Starting device type                       | Inverter                          |                                    |
| 2.1 Starting device                          | CF02D01 M 0.0 X/VCC32456XXXX      |                                    |
| 3 Start capacitor                            | -                                 | [μF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                 | [μF(VAC minimum)]                  |
| 5 Motor protection                           | VCC32456XXXXX                     |                                    |
| 6 Start winding resistance                   | 8.10                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 8.10                              | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (40/150 Hz)    | 2.10                              | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (40/150 Hz) | 2.10                              | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (40/150 Hz)  | -                                 | [A] - Measured according to UL 984 |
| 11 Approval boards certification             |                                   |                                    |

### D - PERFORMANCE - CHECK POINT DATA

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:        |                  | ASHRAE32 |     |                   | (Condensing temperature 35°C (+95°F)) |               |                 |           |       |  |
|-------------------------|------------------|----------|-----|-------------------|---------------------------------------|---------------|-----------------|-----------|-------|--|
| @220V1600RPM            |                  | Static   |     |                   |                                       |               |                 |           |       |  |
| Evaporating temperature | Cooling capacity |          |     | Power consumption | Current consumption                   | Gas flow rate | EFFICIENCY RATE |           |       |  |
|                         | +/- 5%           |          |     | +/- 5%            | +/- 5%                                | +/- 5%        | +/- 7%          |           |       |  |
| °C (°F)                 | [Btu/h]          | [kcal/h] | [W] | [W]               | [A]                                   | [kg/h]        | [Btu/Wh]        | [kcal/Wh] | [W/W] |  |
| -35 (-31)               | 223              | 56       | 65  | 37                | 0.29                                  | 0.70          | 0.00            | 0.00      | 0.00  |  |
| -30 (-22)               | 229              | 58       | 67  | 35                | 0.28                                  | 0.72          | 0.00            | 0.00      | 0.00  |  |
| -25 (-13)               | 372              | 94       | 109 | 46                | 0.36                                  | 1.17          | 0.00            | 0.00      | 0.00  |  |
| -20 (- 4)               | 537              | 135      | 157 | 59                | 0.45                                  | 1.69          | 0.00            | 0.00      | 0.00  |  |
| -15 (+ 5)               | 607              | 153      | 178 | 63                | 0.47                                  | 1.91          | 0.00            | 0.00      | 0.00  |  |
| -10 (+14)               | 466              | 117      | 137 | 47                | 0.35                                  | 1.47          | 0.00            | 0.00      | 0.00  |  |

| TEST CONDITIONS:        |                  | ASHRAE32 |     |                   | (Condensing temperature 45°C (+113°F)) |               |                 |           |       |  |
|-------------------------|------------------|----------|-----|-------------------|--|---------------|-----------------|-----------|-------|--|
| @220V1600RPM            |                  | Static   |     |                   |  |               |                 |           |       |  |
| Evaporating temperature | Cooling capacity |          |     | Power consumption | Current consumption                    | Gas flow rate | EFFICIENCY RATE |           |       |  |
|                         | +/- 5%           |          |     | +/- 5%            | +/- 5%                                 | +/- 5%        | +/- 7%          |           |       |  |
| °C (°F)                 | [Btu/h]          | [kcal/h] | [W] | [W]               | [A]                                    | [kg/h]        | [Btu/Wh]        | [kcal/Wh] | [W/W] |  |
| -35 (-31)               | 207              | 52       | 61  | 38                | 0.31                                   | 0.65          | 0.00            | 0.00      | 0.00  |  |
| -30 (-22)               | 215              | 54       | 63  | 41                | 0.32                                   | 0.67          | 0.00            | 0.00      | 0.00  |  |
| -25 (-13)               | 361              | 91       | 106 | 55                | 0.42                                   | 1.13          | 0.00            | 0.00      | 0.00  |  |
| -20 (- 4)               | 528              | 133      | 155 | 68                | 0.52                                   | 1.66          | 0.00            | 0.00      | 0.00  |  |
| -15 (+ 5)               | 601              | 152      | 176 | 70                | 0.53                                   | 1.89          | 0.00            | 0.00      | 0.00  |  |
| -10 (+14)               | 464              | 117      | 136 | 52                | 0.39                                   | 1.46          | 0.00            | 0.00      | 0.00  |  |

| TEST CONDITIONS:        |                  | ASHRAE32 |     |                   | (Condensing temperature 35°C (+95°F)) |               |                 |           |       |  |
|-------------------------|------------------|----------|-----|-------------------|---------------------------------------|---------------|-----------------|-----------|-------|--|
| @220V2000RPM            |                  | Static   |     |                   |                                       |               |                 |           |       |  |
| Evaporating temperature | Cooling capacity |          |     | Power consumption | Current consumption                   | Gas flow rate | EFFICIENCY RATE |           |       |  |
|                         | +/- 5%           |          |     | +/- 5%            | +/- 5%                                | +/- 5%        | +/- 7%          |           |       |  |
| °C (°F)                 | [Btu/h]          | [kcal/h] | [W] | [W]               | [A]                                   | [kg/h]        | [Btu/Wh]        | [kcal/Wh] | [W/W] |  |
| -35 (-31)               | 278              | 70       | 81  | 45                | 0.36                                  | 0.87          | 0.00            | 0.00      | 0.00  |  |
| -30 (-22)               | 299              | 75       | 88  | 46                | 0.36                                  | 0.93          | 0.00            | 0.00      | 0.00  |  |
| -25 (-13)               | 480              | 121      | 141 | 60                | 0.46                                  | 1.51          | 0.00            | 0.00      | 0.00  |  |
| -20 (- 4)               | 681              | 172      | 199 | 75                | 0.57                                  | 2.14          | 0.00            | 0.00      | 0.00  |  |
| -15 (+ 5)               | 761              | 192      | 223 | 78                | 0.59                                  | 2.40          | 0.00            | 0.00      | 0.00  |  |
| -10 (+14)               | 582              | 147      | 170 | 57                | 0.43                                  | 1.83          | 0.00            | 0.00      | 0.00  |  |

| TEST CONDITIONS:        |                  | ASHRAE32 |     |                   | (Condensing temperature 45°C (+113°F)) |               |                 |           |       |  |
|-------------------------|------------------|----------|-----|-------------------|--|---------------|-----------------|-----------|-------|--|
| @220V2000RPM            |                  | Static   |     |                   |  |               |                 |           |       |  |
| Evaporating temperature | Cooling capacity |          |     | Power consumption | Current consumption                    | Gas flow rate | EFFICIENCY RATE |           |       |  |
|                         | +/- 5%           |          |     | +/- 5%            | +/- 5%                                 | +/- 5%        | +/- 7%          |           |       |  |
| °C (°F)                 | [Btu/h]          | [kcal/h] | [W] | [W]               | [A]                                    | [kg/h]        | [Btu/Wh]        | [kcal/Wh] | [W/W] |  |
| -35 (-31)               | 265              | 67       | 78  | 49                | 0.39                                   | 0.83          | 0.00            | 0.00      | 0.00  |  |
| -30 (-22)               | 276              | 69       | 81  | 52                | 0.41                                   | 0.86          | 0.00            | 0.00      | 0.00  |  |
| -25 (-13)               | 451              | 114      | 132 | 68                | 0.53                                   | 1.42          | 0.00            | 0.00      | 0.00  |  |
| -20 (- 4)               | 651              | 164      | 191 | 83                | 0.63                                   | 2.05          | 0.00            | 0.00      | 0.00  |  |
| -15 (+ 5)               | 736              | 185      | 216 | 85                | 0.64                                   | 2.32          | 0.00            | 0.00      | 0.00  |  |
| -10 (+14)               | 565              | 142      | 165 | 62                | 0.46                                   | 1.78          | 0.00            | 0.00      | 0.00  |  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V3000RPM |                            | 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)                        | 413                        | 104                | 121      | 70                          | 0.55                                  | 1.29                    | 5.95                      | 1.50     | 1.74      |       |
| -30 (-22)                        | 455                        | 115                | 133      | 69                          | 0.52                                  | 1.42                    | 6.33                      | 1.60     | 1.85      |       |
| -25 (-13)                        | 730                        | 184                | 214      | 92                          | 0.68                                  | 2.29                    | 7.84                      | 1.98     | 2.30      |       |
| -20 (- 4)                        | 1031                       | 260                | 302      | 117                         | 0.87                                  | 3.24                    | 9.22                      | 2.32     | 2.70      |       |
| -15 (+ 5)                        | 1148                       | 289                | 336      | 125                         | 0.94                                  | 3.61                    | 9.23                      | 2.33     | 2.70      |       |
| -10 (+14)                        | 875                        | 221                | 257      | 93                          | 0.70                                  | 2.76                    | 6.61                      | 1.66     | 1.94      |       |

| TEST CONDITIONS:<br>@220V3000RPM |                            | 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)                        | 399                        | 100                | 117      | 73                          | 0.56                                   | 1.25                    | 5.44                      | 1.37     | 1.60      |       |
| -30 (-22)                        | 423                        | 107                | 124      | 76                          | 0.56                                   | 1.32                    | 5.50                      | 1.39     | 1.61      |       |
| -25 (-13)                        | 688                        | 173                | 202      | 101                         | 0.75                                   | 2.16                    | 6.84                      | 1.72     | 2.00      |       |
| -20 (- 4)                        | 986                        | 248                | 289      | 127                         | 0.95                                   | 3.10                    | 8.21                      | 2.07     | 2.41      |       |
| -15 (+ 5)                        | 1108                       | 279                | 325      | 133                         | 1.00                                   | 3.49                    | 8.36                      | 2.11     | 2.45      |       |
| -10 (+14)                        | 849                        | 214                | 249      | 98                          | 0.74                                   | 2.67                    | 6.04                      | 1.52     | 1.77      |       |

| TEST CONDITIONS:<br>@220V3000RPM |                            | 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)                        | 342                        | 86                 | 100      | 71                          | 0.53                                   | 1.07                    | 4.78                      | 1.20     | 1.40      |       |
| -30 (-22)                        | 356                        | 90                 | 104      | 79                          | 0.58                                   | 1.11                    | 4.54                      | 1.14     | 1.33      |       |
| -25 (-13)                        | 619                        | 156                | 181      | 108                         | 0.80                                   | 1.94                    | 5.75                      | 1.45     | 1.68      |       |
| -20 (- 4)                        | 922                        | 232                | 270      | 136                         | 1.02                                   | 2.90                    | 7.14                      | 1.80     | 2.09      |       |
| -15 (+ 5)                        | 1058                       | 267                | 310      | 142                         | 1.07                                   | 3.33                    | 7.47                      | 1.88     | 2.19      |       |
| -10 (+14)                        | 819                        | 206                | 240      | 104                         | 0.79                                   | 2.58                    | 5.48                      | 1.38     | 1.60      |       |

| TEST CONDITIONS:<br>@220V4500RPM |                            | 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)                        | 570                        | 144                | 167      | 104                         | 0.80                                  | 1.78                    | 5.53                      | 1.39     | 1.62      |       |
| -30 (-22)                        | 661                        | 167                | 194      | 109                         | 0.79                                  | 2.07                    | 5.78                      | 1.46     | 1.69      |       |
| -25 (-13)                        | 989                        | 249                | 290      | 139                         | 1.01                                  | 3.10                    | 7.07                      | 1.78     | 2.07      |       |
| -20 (- 4)                        | 1320                       | 333                | 387      | 169                         | 1.25                                  | 4.15                    | 8.27                      | 2.08     | 2.42      |       |
| -15 (+ 5)                        | 1422                       | 358                | 417      | 172                         | 1.30                                  | 4.48                    | 8.25                      | 2.08     | 2.42      |       |
| -10 (+14)                        | 1063                       | 268                | 312      | 125                         | 0.95                                  | 3.35                    | 5.89                      | 1.48     | 1.73      |       |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V4500RPM |       | 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) | 554                        | 140      | 162 | 110                                    | 0.83                          | 1.73                    | 4.99                      | 1.26      | 1.46  |
| -30                              | (-22) | 614                        | 155      | 180 | 116                                    | 0.84                          | 1.92                    | 5.08                      | 1.28      | 1.49  |
| -25                              | (-13) | 925                        | 233      | 271 | 147                                    | 1.07                          | 2.90                    | 6.31                      | 1.59      | 1.85  |
| -20                              | (- 4) | 1252                       | 316      | 367 | 176                                    | 1.31                          | 3.94                    | 7.53                      | 1.90      | 2.21  |
| -15                              | (+ 5) | 1364                       | 344      | 400 | 179                                    | 1.36                          | 4.29                    | 7.64                      | 1.93      | 2.24  |
| -10                              | (+14) | 1028                       | 259      | 301 | 129                                    | 0.99                          | 3.24                    | 5.50                      | 1.39      | 1.61  |

| TEST CONDITIONS:<br>@220V4500RPM |       | 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) | 518                        | 130      | 152 | 110                                    | 0.80                          | 1.62                    | 4.67                      | 1.18      | 1.37  |
| -30                              | (-22) | 545                        | 137      | 160 | 117                                    | 0.85                          | 1.70                    | 4.57                      | 1.15      | 1.34  |
| -25                              | (-13) | 835                        | 211      | 245 | 148                                    | 1.11                          | 2.62                    | 5.70                      | 1.44      | 1.67  |
| -20                              | (- 4) | 1156                       | 291      | 339 | 177                                    | 1.36                          | 3.64                    | 6.92                      | 1.74      | 2.03  |
| -15                              | (+ 5) | 1275                       | 321      | 374 | 179                                    | 1.40                          | 4.02                    | 7.13                      | 1.80      | 2.09  |
| -10                              | (+14) | 960                        | 242      | 281 | 128                                    | 1.02                          | 3.02                    | 5.17                      | 1.30      | 1.52  |

### F - EXTERNAL CHARACTERISTICS

|                         |                              |      |                          |
|-------------------------|------------------------------|------|--------------------------|
| 1 Base plate            | European Standard EUEM       |      |                          |
| 2 Tray holder           | Yes                          |      |                          |
| 3 Connectors            |                              |      |                          |
| 3.1 SUCTION             | 6.2 +0.05/+0.05              | [mm] | (0.244" +0.002"/+0.002") |
| 3.1.1 Material          | Copper                       |      |                          |
| 3.1.2 Shape             | Slanted 40° up + 0° to Back  |      |                          |
| 3.2 DISCHARGE           | 4.9 +0.10/-0.05              | [mm] | (0.193" +0.004"/-0.002") |
| 3.2.1 Material          | Copper                       |      |                          |
| 3.2.2 Shape             | Slanted 0° up + 24° to Back  |      |                          |
| 3.3 PROCESS             | 6.2 +0.05/+0.05              | [mm] | (0.244" +0.002"/+0.002") |
| 3.3.1 Material          | Copper                       |      |                          |
| 3.3.2 Shape             | Slanted 40° up + 45° to Back |      |                          |
| 3.4 Oil cooler (Copper) | No                           | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                 |      |                          |