

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | VEM T404U       |
| Nominal Voltage/Frequency | 230 V 40-150 Hz |
| Engineering Number        | 513903038       |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |   |                                   |              |
|------------------------------------|---|-----------------------------------|--------------|
| 1 Type                             | Hermetic reciprocating compressor                       |                                   |              |
| 2 Refrigerant                      | R-290   |                                   |              |
| 3 Nominal voltage and frequency    | 230 / 40-150  | [ V / Hz ]                        |              |
| 4 Application type                 | Low-Medium Back Pressure (Light Commercial / Peak 65°C) |                                   |              |
| 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) | Static/Fan  | 103 to 140 V                      | 103 to 140 V |
| 8.2 LBP (43°C Ambient temperature) | Static/Fan  | 103 to 140 V                      | 103 to 140 V |
| 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      | 1/3+            | [hp]                             |
| 2 Displacement                | 4.25            | [cm <sup>3</sup> ] (0.259 cu.in) |
| 2.1 Bore [mm]                 | 19.000          |                                  |
| 2.2 Stroke [mm]               | 15.000          |                                  |
| 3 Lubricant charge            | 220             | [ml] (7.44 fl.oz.)               |
| 3.1 Lubricants approved       |                 |                                  |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO22 |                                  |
| 4 Weight (with oil charge)    | 7.18            | [kg] (15.83 lb.)                 |
| 5 Nitrogen charge             | -               | [kgf/cm <sup>2</sup> ]           |

### C - ELETRICAL DATA

|  |                                   |                                    |
|--|-----------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 230 V 40-150 Hz 3 ~ (Three phase) |                                    |
| 2 Starting device type                       | Inverter                          |                                    |
| 2.1 Starting device                          | CF03B01 N XX XX                   |                                    |
| 3 Start capacitor                            | -                                 | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | -                                 | [µF(VAC minimum)]                  |
| 5 Motor protection                           | INVERTER CF03B01 N X              |                                    |
| 6 Start winding resistance                   | 13.65                             | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 13.65                             | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50/60 Hz)     | 2.80/2.80                         | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz)  | 2.00/2.00                         | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50/60 Hz)   | 2.00/2.00                         | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | TUV - UL                          |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|   |          |     |                                     |                               |   |                           |  |       |
|---|----------|-----|-------------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@115V1200RPM</b> |          |     | <b>ASHRAELBP32</b><br><b>Static</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] |
| 326                                     | 82       | 95  | 61                                  | 0.96                          | 0.97  | 5.33                      | 1.34   | 1.56  |

|   |          |     |                                  |                               |   |                           |  |       |
|---|----------|-----|----------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@115V1200RPM</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] |
| 330                                     | 83       | 97  | 58                               | 0.92                          | 0.98  | 5.66                      | 1.43   | 1.66  |

|   |          |     |                                     |                               |   |                           |  |       |
|---|----------|-----|-------------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@115V1600RPM</b> |          |     | <b>ASHRAELBP32</b><br><b>Static</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] |
| 406                                     | 102      | 119 | 71                                  | 1.09                          | 1.21  | 5.72                      | 1.44   | 1.68  |

|   |          |     |                                  |                               |   |                           |  |       |
|---|----------|-----|----------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@115V1600RPM</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] |
| 414                                     | 104      | 121 | 70                               | 1.07                          | 1.23  | 5.94                      | 1.50   | 1.74  |

|   |          |     |                                     |                               |   |                           |  |       |
|---|----------|-----|-------------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@115V2000RPM</b> |          |     | <b>ASHRAELBP32</b><br><b>Static</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] |
| 504                                     | 127      | 148 | 86                                  | 1.29                          | 1.50  | 5.86                      | 1.48   | 1.72  |

|   |          |     |                                  |                               |   |                           |  |       |
|---|----------|-----|----------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@115V2000RPM</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] |
| 519                                     | 131      | 152 | 85                               | 1.28                          | 1.54  | 6.08                      | 1.53   | 1.78  |

### E - PERFORMANCE - CURVES

### D - PERFORMANCE - CHECK POINT DATA

|   |          |     |                                     |                               |   |                           |  |       |
|---|----------|-----|-------------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@115V3000RPM</b> |          |     | <b>ASHRAELBP32</b><br><b>Static</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] |
| 754                                     | 190      | 221 | 126                                 | 1.83                          | 2.24  | 6.00                      | 1.51   | 1.76  |

|   |          |     |                                  |                               |   |                           |  |       |
|---|----------|-----|----------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@115V3000RPM</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] |
| 777                                     | 196      | 228 | 126                              | 1.83                          | 2.31  | 6.14                      | 1.55   | 1.80  |

|   |          |     |                                     |                               |   |                           |  |       |
|---|----------|-----|-------------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@115V3600RPM</b> |          |     | <b>ASHRAELBP32</b><br><b>Static</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] |
| 883                                     | 223      | 259 | 148                                 | 2.12                          | 2.63  | 5.96                      | 1.50   | 1.75  |

|   |          |     |                                  |                               |   |                           |  |       |
|---|----------|-----|----------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@115V3600RPM</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] |
| 914                                     | 230      | 268 | 150                              | 2.13                          | 2.72  | 6.09                      | 1.53   | 1.78  |

|   |          |     |                                     |                               |   |                           |  |       |
|---|----------|-----|-------------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@115V4500RPM</b> |          |     | <b>ASHRAELBP32</b><br><b>Static</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] |
| 1116                                    | 281      | 327 | 191                                 | 2.66                          | 3.32  | 5.84                      | 1.47   | 1.71  |

|   |          |     |                                  |                               |   |                           |  |       |
|---|----------|-----|----------------------------------|-------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br><b>@115V4500RPM</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] |
| 1158                                    | 292      | 339 | 194                              | 2.69                          | 3.45  | 5.96                      | 1.50   | 1.75  |

### F - EXTERNAL CHARACTERISTICS

|                         |                 |      |                          |
|-------------------------|-----------------|------|--------------------------|
| 1 Base plate            | Universal EUEM  |      |                          |
| 2 Tray holder           | No              |      |                          |
| 3 Connectors            |                 |      |                          |
| 3.1 SUCTION             | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.1.1 Material          | Copper          |      |                          |
| 3.1.2 Shape             | 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    |      |                          |