

### COMPRESSOR DEFINITION

|                           |                    |
|---------------------------|--------------------|
| Designation               | EM C3121U          |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number        | 513301739          |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |   |                                   |           |
|------------------------------------|---|-----------------------------------|-----------|
| 1 Type                             | Hermetic reciprocating compressor           |                                   |           |
| 2 Refrigerant                      | R-290                                       |                                   |           |
| 3 Nominal voltage and frequency    | 220-240 / 50-60                             | [ V / Hz ]                        |           |
| 4 Application type                 | Low-Medium Back Pressure (Light Commercial) |                                   |           |
| 4.1 Evaporating temperature range  | -35°C to 0°C                                | (-31°F to 32°F)                   |           |
| 5 Motor type                       | RSCR  |                                   |           |
| 6 Starting torque                  | LST - Low Starting Torque                   |                                   |           |
| 7 Expansion device                 | Capillary tube                              |                                   |           |
| 8 Compressor cooling               | Operating voltage range                     |                                   |           |
|                                    |   | 50 Hz                             | 60 Hz     |
| 8.1 LBP (32°C Ambient temperature) | -   | -                                 | -         |
| 8.2 LBP (43°C Ambient temperature) | -   | -                                 | -         |
| 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      | 1/4           | [hp]                                       |
| 2 Displacement                | 5.19          | [cm <sup>3</sup> ] (0.317 cu.in)           |
| 2.1 Bore [mm]                 | 21.000        |  |
| 2.2 Stroke [mm]               | 15.000        |  |
| 3 Lubricant charge            | 150           | [ml] (5.07 fl.oz.)                         |
| 3.1 Lubricants approved       |               |  |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 |  |
| 4 Weight (with oil charge)    | 6.8           | [kg] (14.99 lb.)                           |
| 5 Nitrogen charge             | 0.2 to 0.3    | [kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig) |

### C - ELETRICAL DATA

|  |                                       |                                    |
|--|---------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220-240 V 50-60 Hz 1 ~ (Single phase) |                                    |
| 2 Starting device type                       | PTC                                   |                                    |
| 2.1 Starting device                          | 8EA17C3/QPS2-A22MD3                   |                                    |
| 3 Start capacitor                            | -                                     | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 5(350)                                | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM283KFBYY-53                        |                                    |
| 6 Start winding resistance                   | 18.35                                 | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 13.77                                 | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50 Hz)        | 7.58/7.12                             | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz)     | 2.04/1.78                             | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz)      | 2.16/1.86                             | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | VDE                                   |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                                |                                  |   |                           |                                      |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|---|---------------------------|--------------------------------------|-------|
| TEST CONDITIONS:<br>@220V60Hz |          |     | ASHRAEHBP32<br>Static          |                                  | Evaporating temperature<br>(Condensing temperature) |                           | 7.2°C (44.96°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity<br>+/- 5%    |          |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5%                          | EFFICIENCY RATE<br>+/- 7% |                                      |       |
| [Btu/h]                       | [kcal/h] | [W] | [W]                            | [A]                              | [kg/h]  | [Btu/Wh]                  | [kcal/Wh]                            | [W/W] |
| 3269                          | 824      | 958 | 289                            | 1.34                             |   | 11.30                     | 2.85                                 | 3.31  |

|                               |          |     |                                |                                  |   |                           |                                      |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|---|---------------------------|--------------------------------------|-------|
| TEST CONDITIONS:<br>@220V60Hz |          |     | ASHRAEHBP32<br>Fan             |                                  | Evaporating temperature<br>(Condensing temperature) |                           | 7.2°C (44.96°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity<br>+/- 5%    |          |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5%                          | EFFICIENCY RATE<br>+/- 7% |                                      |       |
| [Btu/h]                       | [kcal/h] | [W] | [W]                            | [A]                              | [kg/h]  | [Btu/Wh]                  | [kcal/Wh]                            | [W/W] |
| 3325                          | 838      | 974 | 289                            | 1.34                             |   | 11.50                     | 2.90                                 | 3.37  |

|                               |          |     |                                |                                  |   |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br>@220V50Hz |          |     | ASHRAELBP32<br>Static          |                                  | Evaporating temperature<br>(Condensing temperature) |                           | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity<br>+/- 5%    |          |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5%                          | EFFICIENCY RATE<br>+/- 7% |  |       |
| [Btu/h]                       | [kcal/h] | [W] | [W]                            | [A]                              | [kg/h]  | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |
| 800                           | 202      | 234 | 146                            | 0.74                             | 2.38  | 5.47                      | 1.38                                   | 1.60  |

|                               |          |     |                                |                                  |   |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br>@220V50Hz |          |     | ASHRAELBP32<br>Fan             |                                  | Evaporating temperature<br>(Condensing temperature) |                           | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity<br>+/- 5%    |          |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5%                          | EFFICIENCY RATE<br>+/- 7% |  |       |
| [Btu/h]                       | [kcal/h] | [W] | [W]                            | [A]                              | [kg/h]  | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |
| 824                           | 208      | 241 | 146                            | 0.74                             | 2.45  | 5.64                      | 1.42                                   | 1.65  |

|                               |          |     |                                |                                  |   |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br>@220V60Hz |          |     | ASHRAELBP32<br>Static          |                                  | Evaporating temperature<br>(Condensing temperature) |                           | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity<br>+/- 5%    |          |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5%                          | EFFICIENCY RATE<br>+/- 7% |  |       |
| [Btu/h]                       | [kcal/h] | [W] | [W]                            | [A]                              | [kg/h]  | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |
| 992                           | 250      | 291 | 171                            | 0.78                             | 2.95  | 5.82                      | 1.47                                   | 1.71  |

|                               |          |     |                                |                                  |   |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|---|---------------------------|--|-------|
| TEST CONDITIONS:<br>@220V60Hz |          |     | ASHRAELBP32<br>Fan             |                                  | Evaporating temperature<br>(Condensing temperature) |                           | -23.3°C (-9.94°F)<br>54.4°C (129.92°F) |       |
| Cooling capacity<br>+/- 5%    |          |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5%                          | EFFICIENCY RATE<br>+/- 7% |  |       |
| [Btu/h]                       | [kcal/h] | [W] | [W]                            | [A]                              | [kg/h]  | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |
| 1015                          | 256      | 297 | 170                            | 0.78                             | 3.02  | 5.97                      | 1.50                                   | 1.75  |

### E - PERFORMANCE - CURVES

### F - EXTERNAL CHARACTERISTICS

|                         |                 |      |                          |
|-------------------------|-----------------|------|--------------------------|
| 1 Base plate            | Universal       |      |                          |
| 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    |      |                          |