

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | ES C+55CBT      |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number        | 518102615       |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                   |                                   |              |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type                             | Hermetic reciprocating compressor |                                   |              |
| 2 Refrigerant                      | R-600a                            |                                   |              |
| 3 Nominal voltage and frequency    | 115-127 / 60                      | [ 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                       | 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) | Static                            | -                                 | 103 to 140 V |
| 8.2 LBP (43°C Ambient temperature) | Static                            | -                                 | 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                      | 6.9                               | [kgf/cm <sup>2</sup> ] (98 psig)  | / °C - °F    |
| 9.2 Peak                           | 7.8                               | [kgf/cm <sup>2</sup> ] (111 psig) | / °C - °F    |
| 10 Maximum winding temperature     | 130                               | [ °C ]                            |              |

### B - MECHANICAL DATA

|                               |                |                                  |
|-------------------------------|----------------|----------------------------------|
| 1 Commercial designation      | 1/5            | [hp]                             |
| 2 Displacement                | 7.87           | [cm <sup>3</sup> ] (0.480 cu.in) |
| 2.1 Bore [mm]                 | 22.500         |                                  |
| 2.2 Stroke [mm]               | 19.800         |                                  |
| 3 Lubricant charge            | 115            | [ml] (3.89 fl.oz.)               |
| 3.1 Lubricants approved       |                |                                  |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO5 |                                  |
| 4 Weight (with oil charge)    | 5.2            | [kg] (11.46 lb.)                 |
| 5 Nitrogen charge             | -              | [kgf/cm <sup>2</sup> ]           |

### C - ELETRICAL DATA

|  |                                    |                                    |
|--|------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 115-127 V 60 Hz 1 ~ (Single phase) |                                    |
| 2 Starting device type                       | TSD                                |                                    |
| 2.1 Starting device                          | TSD2-115V                          |                                    |
| 3 Start capacitor                            | -                                  | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 12(180)                            | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM302KFBYY-53                     |                                    |
| 6 Start winding resistance                   | 6.31                               | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 5.44                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 8.30                               | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 1.80                               | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | 2.00                               | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | UL                                 |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@115V60Hz |          |     | 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] |
| 560                           | 141      | 164 | 88                             | 0.81                             | 1.76   | 6.34                      | 1.60                                   | 1.86  |

### E - PERFORMANCE - CURVES

|                               |                            |                    |     |                                |                                  |  |                           |           |       |  |
|-------------------------------|----------------------------|--------------------|-----|--------------------------------|----------------------------------|--|---------------------------|-----------|-------|--|
| TEST CONDITIONS:<br>@115V60Hz |                            | ASHRAE32<br>Static |     |                                |                                  | (Condensing temperature 35°C (+95°F) ) |                           |           |       |  |
| Evaporating<br>temperature    | Cooling capacity<br>+/- 5% |                    |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>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)                     | 337                        | 85                 | 99  | 58                             | 0.53                             | 1.05                                   | 5.83                      | 1.47      | 1.71  |  |
| -30 (-22)                     | 449                        | 113                | 131 | 67                             | 0.61                             | 1.41                                   | 6.71                      | 1.69      | 1.97  |  |
| -25 (-13)                     | 585                        | 147                | 171 | 76                             | 0.69                             | 1.83                                   | 7.67                      | 1.93      | 2.25  |  |
| -20 (- 4)                     | 747                        | 188                | 219 | 86                             | 0.78                             | 2.35                                   | 8.71                      | 2.19      | 2.55  |  |
| -15 (+ 5)                     | 937                        | 236                | 275 | 95                             | 0.86                             | 2.95                                   | 9.84                      | 2.48      | 2.88  |  |
| -10 (+14)                     | 1158                       | 292                | 339 | 105                            | 0.94                             | 3.65                                   | 11.09                     | 2.79      | 3.25  |  |

|                               |                            |                    |     |                                |                                  |   |                           |           |       |  |
|-------------------------------|----------------------------|--------------------|-----|--------------------------------|----------------------------------|---|---------------------------|-----------|-------|--|
| TEST CONDITIONS:<br>@115V60Hz |                            | ASHRAE32<br>Static |     |                                |                                  | (Condensing temperature 45°C (+113°F) ) |                           |           |       |  |
| Evaporating<br>temperature    | Cooling capacity<br>+/- 5% |                    |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>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)                     | 306                        | 77                 | 90  | 59                             | 0.52                             | 0.96                                    | 5.25                      | 1.32      | 1.54  |  |
| -30 (-22)                     | 415                        | 105                | 122 | 69                             | 0.61                             | 1.30                                    | 6.05                      | 1.53      | 1.77  |  |
| -25 (-13)                     | 549                        | 138                | 161 | 80                             | 0.71                             | 1.72                                    | 6.88                      | 1.73      | 2.02  |  |
| -20 (- 4)                     | 710                        | 179                | 208 | 91                             | 0.82                             | 2.23                                    | 7.75                      | 1.95      | 2.27  |  |
| -15 (+ 5)                     | 901                        | 227                | 264 | 104                            | 0.93                             | 2.83                                    | 8.66                      | 2.18      | 2.54  |  |
| -10 (+14)                     | 1122                       | 283                | 329 | 116                            | 1.05                             | 3.54                                    | 9.64                      | 2.43      | 2.83  |  |

|                               |                            |                    |     |                                |                                  |   |                           |           |       |  |
|-------------------------------|----------------------------|--------------------|-----|--------------------------------|----------------------------------|---|---------------------------|-----------|-------|--|
| TEST CONDITIONS:<br>@115V60Hz |                            | ASHRAE32<br>Static |     |                                |                                  | (Condensing temperature 55°C (+131°F) ) |                           |           |       |  |
| Evaporating<br>temperature    | Cooling capacity<br>+/- 5% |                    |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>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)                     | 279                        | 70                 | 82  | 58                             | 0.53                             | 0.87                                    | 4.79                      | 1.21      | 1.40  |  |
| -30 (-22)                     | 382                        | 96                 | 112 | 69                             | 0.62                             | 1.20                                    | 5.53                      | 1.39      | 1.62  |  |
| -25 (-13)                     | 512                        | 129                | 150 | 82                             | 0.73                             | 1.61                                    | 6.26                      | 1.58      | 1.83  |  |
| -20 (- 4)                     | 670                        | 169                | 196 | 96                             | 0.86                             | 2.10                                    | 6.97                      | 1.76      | 2.04  |  |
| -15 (+ 5)                     | 857                        | 216                | 251 | 111                            | 1.00                             | 2.70                                    | 7.70                      | 1.94      | 2.26  |  |
| -10 (+14)                     | 1076                       | 271                | 315 | 127                            | 1.15                             | 3.40                                    | 8.44                      | 2.13      | 2.47  |  |

### F - EXTERNAL CHARACTERISTICS

|                         |                  |      |                          |
|-------------------------|------------------|------|--------------------------|
| 1 Base plate            | Universal ES/FMS |      |                          |
| 2 Tray holder           | Yes              |      |                          |
| 3 Connectors            |                  |      |                          |
| 3.1 SUCTION             | 6.5 +0.12/-0.08  | [mm] | (0.256" +0.005"/-0.003") |
| 3.1.1 Material          | Copper           |      |                          |
| 3.1.2 Shape             | Slanted 45° up   |      |                          |
| 3.2 DISCHARGE           | 4.94 +0.08/-0.08 | [mm] | (0.194" +0.003"/-0.003") |
| 3.2.1 Material          | Copper           |      |                          |
| 3.2.2 Shape             | Slanted 45° up   |      |                          |
| 3.3 PROCESS             | 6.5 +0.12/-0.08  | [mm] | (0.256" +0.005"/-0.003") |
| 3.3.1 Material          | Copper           |      |                          |
| 3.3.2 Shape             | Slanted 45° up   |      |                          |
| 3.4 Oil cooler (Copper) | No               | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs     |      |                          |