

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | ES X55CBC       |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number        | 518102602       |

### 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                       | PTC                                |                                    |
| 2.1 Starting device                          | 5SP14X302K                         |                                    |
| 3 Start capacitor                            | -                                  | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 12(180)                            | [µF(VAC minimum)]                  |
| 5 Motor protection                           | 4TM302KFBYY-53                     |                                    |
| 6 Start winding resistance                   | 7.54                               | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 7.07                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 7.91                               | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 0.96                               | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | 1.35                               | [A] - Measured according to UL 984 |
| 11 Approval boards certification             |                                    |                                    |

### 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] |
| 563                           | 142      | 165 | 95                             | 0.86                             | 1.77   | 5.94                      | 1.50                                   | 1.74  |

### 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  | 65                             | 0.58                                  | 1.05                       | 5.21                      | 1.31      | 1.53  |
| -30                           | (-22) | 449                        | 113      | 131 | 74                             | 0.66                                  | 1.41                       | 6.08                      | 1.53      | 1.78  |
| -25                           | (-13) | 585                        | 147      | 171 | 83                             | 0.75                                  | 1.83                       | 7.04                      | 1.77      | 2.06  |
| -20                           | (- 4) | 747                        | 188      | 219 | 92                             | 0.83                                  | 2.35                       | 8.09                      | 2.04      | 2.37  |
| -15                           | (+ 5) | 937                        | 236      | 275 | 102                            | 0.91                                  | 2.95                       | 9.23                      | 2.33      | 2.70  |
| -10                           | (+14) | 1158                       | 292      | 339 | 111                            | 0.99                                  | 3.65                       | 10.48                     | 2.64      | 3.07  |

|                               |       |                            |          |     |                                |  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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  | 66                             | 0.59                                   | 0.96                       | 4.67                      | 1.18      | 1.37  |
| -30                           | (-22) | 415                        | 105      | 122 | 76                             | 0.68                                   | 1.30                       | 5.45                      | 1.37      | 1.60  |
| -25                           | (-13) | 549                        | 138      | 161 | 87                             | 0.78                                   | 1.72                       | 6.27                      | 1.58      | 1.84  |
| -20                           | (- 4) | 710                        | 179      | 208 | 99                             | 0.89                                   | 2.23                       | 7.14                      | 1.80      | 2.09  |
| -15                           | (+ 5) | 901                        | 227      | 264 | 111                            | 1.00                                   | 2.83                       | 8.07                      | 2.03      | 2.36  |
| -10                           | (+14) | 1122                       | 283      | 329 | 124                            | 1.11                                   | 3.54                       | 9.07                      | 2.29      | 2.66  |

|                               |       |                            |          |     |                                |  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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  | 65                             | 0.59                                   | 0.87                       | 4.26                      | 1.07      | 1.25  |
| -30                           | (-22) | 382                        | 96       | 112 | 77                             | 0.69                                   | 1.20                       | 4.97                      | 1.25      | 1.46  |
| -25                           | (-13) | 512                        | 129      | 150 | 90                             | 0.81                                   | 1.61                       | 5.68                      | 1.43      | 1.66  |
| -20                           | (- 4) | 670                        | 169      | 196 | 105                            | 0.94                                   | 2.10                       | 6.40                      | 1.61      | 1.87  |
| -15                           | (+ 5) | 857                        | 216      | 251 | 120                            | 1.08                                   | 2.70                       | 7.14                      | 1.80      | 2.09  |
| -10                           | (+14) | 1076                       | 271      | 315 | 136                            | 1.22                                   | 3.40                       | 7.92                      | 2.00      | 2.32  |

### F - EXTERNAL CHARACTERISTICS

|                         |                          |      |                          |
|-------------------------|--------------------------|------|--------------------------|
| 1 Base plate            | European Standard ES/FMS |      |                          |
| 2 Tray holder           | No                       |      |                          |
| 3 Connectors            |                          |      |                          |
| 3.1 SUCTION             | 6.1 +0.10/+0.00          | [mm] | (0.240" +0.004"/+0.000") |
| 3.1.1 Material          | Copper                   |      |                          |
| 3.1.2 Shape             | Slanted 45° up           |      |                          |
| 3.2 DISCHARGE           | 5.1 +0.10/+0.00          | [mm] | (0.201" +0.004"/+0.000") |
| 3.2.1 Material          | Copper                   |      |                          |
| 3.2.2 Shape             | Slanted 45° up           |      |                          |
| 3.3 PROCESS             | 6 +0.08/-0.08            | [mm] | (0.236" +0.003"/-0.003") |
| 3.3.1 Material          | Copper(OD)               |      |                          |
| 3.3.2 Shape             | Slanted 45° up           |      |                          |
| 3.4 Oil cooler (Copper) | No                       | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs             |      |                          |