

## COMPRESSOR DEFINITION

|                           |               |
|---------------------------|---------------|
| Designation               | EXS170CE-4    |
| Nominal Voltage/Frequency | 220-240V/50Hz |
| Engineering Number        | 1136000034    |

## A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                           |                  |                         |       |
|------------------------------------|-------------------------------------------|------------------|-------------------------|-------|
| 1 Type                             | Hermetic Reciprocating                    |                  |                         |       |
| 2 Refrigerant                      | R600a                                     |                  |                         |       |
| 3 Nominal voltage and frequency    | 220-240/50                                | [V / Hz]         |                         |       |
| 4 Application type                 | LBP                                       |                  |                         |       |
| 4.1 Evaporating temperature range  | -35 ~ -15                                 | [°C]             |                         |       |
| 5 Motor type                       | RSIR                                      |                  |                         |       |
| 6 Starting torque                  | LST                                       |                  |                         |       |
| 7 Expantion device                 | .Capillary Tube                           |                  |                         |       |
| 8 Compressor cooling               | Minimum Starting Voltage<br>(ABS 0.4Mpa ) |                  | Operating voltage range |       |
|                                    | 50 Hz                                     | 60 Hz            | 50 Hz                   | 60 Hz |
| 8.1 LBP (32°C Ambient temperature) | ≤185V                                     | -                | 187V~254V               | -     |
| 8.2 LBP (43°C Ambient temperature) | ≤185V                                     | -                | 187V~254V               | -     |
| 8.3 HBP (32°C Ambient temperature) | -                                         | -                | -                       | -     |
| 8.4 HBP (43°C Ambient temperature) | -                                         | -                | -                       | -     |
| 9 Maximum condensing temperature   |                                           |                  |                         |       |
| 9.1 Operating                      | 65                                        | [°C]             |                         |       |
| 9.2 Peak                           | 70                                        | [°C]             |                         |       |
| 10 Maximum winding temperature     | 130                                       | [°C]             |                         |       |
| 11 Noise (ASHRAE LBP)              | ≤42                                       | dB(A)            |                         |       |
| 12 Vibration                       | ≤0.95                                     | m/s <sup>2</sup> |                         |       |

## B - MECHANICAL DATA

|                          |       |                    |
|--------------------------|-------|--------------------|
| 1 Commercial designation | 1/4+  | [hp]               |
| 2 Displacement           | 11.95 | [cm <sup>3</sup> ] |
| 2.1 Bore                 | 28    | [mm]               |
| 2.2 Stroke               | 9.7   | [mm]               |
| 3 Lubricant charge       | 160   | [ml]               |
| 3.1 Lubricants approved  |       |                    |



## COMPRESSOR TECHNICAL DATA

|                               |                    |      |
|-------------------------------|--------------------|------|
| 3.2 Lubricants type/viscosity | Mineral oil/ISO 10 |      |
| 4 Weight (with oil charge)    | 7.1                | [kg] |

### C - ELECTRICAL DATA

|                                              |                            |                            |
|----------------------------------------------|----------------------------|----------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220-240V/50Hz/Single Phase |                            |
| 2 Starting device type                       | PTC                        |                            |
| 2.1 Starting device                          | QP2-15                     |                            |
| 3 Start capacitor                            | -                          | [ $\mu$ F(VAC minimum)]    |
| 4 Run capacitor                              | -                          | [ $\mu$ F(VAC minimum)]    |
| 5 Motor protection                           | DRB21N61A1                 |                            |
| 6 Start winding resistance                   | 15.3                       | [ $\Omega$ at 25°C] +/- 8% |
| 7 Run winding resistance                     | 13                         | [ $\Omega$ at 25°C] +/- 8% |

|                                         |     |                                    |
|-----------------------------------------|-----|------------------------------------|
| 8 LRA - Locked rotor amperage (50 Hz)   | 7.8 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage LBP (50 Hz)  | 1.2 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz) | -   | [A] - Measured according to UL 984 |
| 11 Approval boards certification        |     |                                    |

## D - PERFORMANCE - CHECK POINT DATA

| TEST CONDITIONS:<br>@220V50Hz   |          |     | ASHRAELBP32<br>Static      |                            | Evaporating temperature<br>Condensing temperature |                                | -23.3°C<br>54.4°C |       |
|---------------------------------|----------|-----|----------------------------|----------------------------|---------------------------------------------------|--------------------------------|-------------------|-------|
| Cooling capacity (Qe)<br>+/- 5% |          |     | Input power (We)<br>+/- 5% | Electric current<br>+/- 5% | Mass flow rate<br>+/- 5%                          | Efficiency EER & COP<br>+/- 7% |                   |       |
| [Btu/h]                         | [kcal/h] | [W] | [W]                        | [A]                        | [kg/h]                                            | [Btu/Wh]                       | [kcal/Wh]         | [W/W] |
| 682                             | 172      | 200 | 148                        | 1.10                       | 2107                                              | 4.61                           | 1.16              | 1.35  |

## E - PERFORMANCE – CURVES

| TEST CONDITIONS:<br>@220V50Hz |                            |          | ASHRAE32 Static |                       | Condensing temperature 35°C |                     |                                |           |       |
|-------------------------------|----------------------------|----------|-----------------|-----------------------|-----------------------------|---------------------|--------------------------------|-----------|-------|
| Evaporating<br>temperature    | Cooling capacity<br>+/- 5% |          |                 | Input power<br>+/- 5% | Electric current<br>+/- 5%  | Mass flow<br>+/- 5% | Efficiency EER & COP<br>+/- 7% |           |       |
| °C                            | [Btu/h]                    | [kcal/h] | [W]             | [W]                   | [A]                         | [kg/h]              | [Btu/Wh]                       | [kcal/Wh] | [W/W] |
| -35                           | 399.7                      | 100.7    | 117.1           | 97.3                  | 0.95                        | 1235.8              | 4.11                           | 1.04      | 1.20  |
| -30                           | 532.7                      | 134.3    | 156.1           | 110.5                 | 0.98                        | 1648.5              | 4.82                           | 1.21      | 1.41  |
| -25                           | 687.0                      | 173.2    | 201.4           | 123.6                 | 1.01                        | 2128.5              | 5.56                           | 1.40      | 1.63  |
| -20                           | 875.1                      | 220.6    | 256.5           | 138.3                 | 1.04                        | 2715.1              | 6.33                           | 1.60      | 1.85  |
| -15                           | 1108.4                     | 279.4    | 324.8           | 155.5                 | 1.09                        | 3444.5              | 7.13                           | 1.80      | 2.09  |
| -10                           | 1370.1                     | 345.3    | 401.6           | 173.1                 | 1.15                        | 4267.2              | 7.92                           | 2.00      | 2.32  |

| TEST CONDITIONS:<br>@220V50Hz |                            |          | ASHRAE32 Static |                       | Condensing temperature 45°C |                     |                                |           |       |
|-------------------------------|----------------------------|----------|-----------------|-----------------------|-----------------------------|---------------------|--------------------------------|-----------|-------|
| Evaporating<br>temperature    | Cooling capacity<br>+/- 5% |          |                 | Input power<br>+/- 5% | Electric current<br>+/- 5%  | Mass flow<br>+/- 5% | Efficiency EER & COP<br>+/- 7% |           |       |
| °C                            | [Btu/h]                    | [kcal/h] | [W]             | [W]                   | [A]                         | [kg/h]              | [Btu/Wh]                       | [kcal/Wh] | [W/W] |

|     |        |       |       |       |      |        |      |      |      |
|-----|--------|-------|-------|-------|------|--------|------|------|------|
| -35 | 360.6  | 90.9  | 105.7 | 98.8  | 0.96 | 1133.1 | 3.65 | 0.92 | 1.07 |
| -30 | 495.1  | 124.8 | 145.1 | 115.0 | 0.99 | 1557.2 | 4.31 | 1.09 | 1.26 |
| -25 | 646.1  | 162.8 | 189.4 | 130.6 | 1.02 | 2034.6 | 4.95 | 1.25 | 1.45 |
| -20 | 826.1  | 208.2 | 242.1 | 147.1 | 1.07 | 2605.5 | 5.62 | 1.42 | 1.65 |
| -15 | 1051.3 | 265.0 | 308.1 | 166.7 | 1.12 | 3321.2 | 6.31 | 1.59 | 1.85 |
| -10 | 1309.1 | 329.9 | 383.7 | 187.5 | 1.19 | 4144   | 6.98 | 1.76 | 2.05 |

| TEST CONDITIONS:        |                            |                 |       |                       |                            |                             |                                |           |       |
|-------------------------|----------------------------|-----------------|-------|-----------------------|----------------------------|-----------------------------|--------------------------------|-----------|-------|
| @220V50Hz               |                            | ASHRAE32 Static |       |                       |                            | Condensing temperature 55°C |                                |           |       |
| Evaporating temperature | Cooling capacity<br>+/- 5% |                 |       | Input power<br>+/- 5% | Electric current<br>+/- 5% | Mass flow<br>+/- 5%         | Efficiency EER & COP<br>+/- 7% |           |       |
| °C                      | [Btu/h]                    | [kcal/h]        | [W]   | [W]                   | [A]                        | [kg/h]                      | [Btu/Wh]                       | [kcal/Wh] | [W/W] |
| -35                     | 325.2                      | 82.0            | 95.3  | 99.3                  | 0.96                       | 1022.2                      | 3.28                           | 0.83      | 0.96  |
| -30                     | 449.7                      | 113.3           | 131.8 | 116.3                 | 0.99                       | 1414.8                      | 3.87                           | 0.97      | 1.13  |
| -25                     | 608.2                      | 153.3           | 178.3 | 135.9                 | 1.03                       | 1915.6                      | 4.48                           | 1.13      | 1.31  |
| -20                     | 788.3                      | 198.7           | 231.0 | 155.7                 | 1.09                       | 2486.8                      | 5.06                           | 1.28      | 1.48  |
| -15                     | 1006.5                     | 253.7           | 295.0 | 177.4                 | 1.16                       | 3180.3                      | 5.67                           | 1.43      | 1.66  |
| -10                     | 1260.0                     | 317.6           | 369.3 | 200.6                 | 1.23                       | 3989.6                      | 6.28                           | 1.58      | 1.84  |

| TEST CONDITIONS:        |                            |                 |       |                       |                            |                             |                                |           |       |
|-------------------------|----------------------------|-----------------|-------|-----------------------|----------------------------|-----------------------------|--------------------------------|-----------|-------|
| @220V50Hz               |                            | ASHRAE32 Static |       |                       |                            | Condensing temperature 65°C |                                |           |       |
| Evaporating temperature | Cooling capacity<br>+/- 5% |                 |       | Input power<br>+/- 5% | Electric current<br>+/- 5% | Mass flow<br>+/- 5%         | Efficiency EER & COP<br>+/- 7% |           |       |
| °C                      | [Btu/h]                    | [kcal/h]        | [W]   | [W]                   | [A]                        | [kg/h]                      | [Btu/Wh]                       | [kcal/Wh] | [W/W] |
| -35                     | 279.8                      | 70.5            | 82.0  | 96.3                  | 0.95                       | 879.6                       | 2.91                           | 0.73      | 0.85  |
| -30                     | 405.3                      | 102.2           | 118.8 | 116.1                 | 0.99                       | 1275.5                      | 3.49                           | 0.88      | 1.02  |
| -25                     | 551.0                      | 138.9           | 161.5 | 136.9                 | 1.04                       | 1736.1                      | 4.02                           | 1.01      | 1.18  |
| -20                     | 733.7                      | 184.9           | 215.0 | 161.0                 | 1.10                       | 2315.2                      | 4.56                           | 1.15      | 1.34  |
| -15                     | 949.3                      | 239.3           | 278.2 | 186.1                 | 1.18                       | 3000.5                      | 5.10                           | 1.29      | 1.49  |
| -10                     | 1198.0                     | 301.9           | 351.1 | 212.8                 | 1.28                       | 3794                        | 5.63                           | 1.42      | 1.65  |

**E - EXTERNAL CHARACTERISTICS**

|                       |                          |      |
|-----------------------|--------------------------|------|
| 1 Base plate          | 70X170                   |      |
| 2 Tray holder         | Yes                      |      |
| 3 Connectors          |                          |      |
| 3.1 SUCTION           | $\phi$ 6.17- $\phi$ 6.24 | [mm] |
| 3.1.1 Material        | Copper                   |      |
| 3.1.2 Shape           | slanted                  |      |
| 3.2 DISCHARGE         | $\Phi$ 4.9- $\phi$ 5.0   | [mm] |
| 3.2.1 Material        | Copper                   |      |
| 3.2.2 Shape           | slanted                  |      |
| 3.3 PROCESS           | $\phi$ 6.17- $\phi$ 6.24 | [mm] |
| 3.3.1 Material        | Copper                   |      |
| 3.3.2 Shape           | slanted                  |      |
| 3.4 Connector sealing | -                        |      |