

### COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | NE X2180UB      |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number        | 513308229       |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                   |                                   |           |
|------------------------------------|-----------------------------------|-----------------------------------|-----------|
| 1 Type                             | Hermetic reciprocating compressor |                                   |           |
| 2 Refrigerant                      | R-290                             |                                   |           |
| 3 Nominal voltage and frequency    | 220-240 / 50                      | [ V / Hz ]                        |           |
| 4 Application type                 | Low Back Pressure R290            |                                   |           |
| 4.1 Evaporating temperature range  | -40°C to -10°C                    | (-40°F to 14°F)                   |           |
| 5 Motor type                       | CSCR                              |                                   |           |
| 6 Starting torque                  | HST - Hight 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) | -                                 | -                                 | -         |
| 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             | [hp]                             |
| 2 Displacement                | 18.70         | [cm <sup>3</sup> ] (1.141 cu.in) |
| 2.1 Bore [mm]                 | 32.186        |                                  |
| 2.2 Stroke [mm]               | 23.000        |                                  |
| 3 Lubricant charge            | 350           | [ml] (11.84 fl.oz.)              |
| 3.1 Lubricants approved       |               |                                  |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 |                                  |
| 4 Weight (with oil charge)    | 11.2          | [kg] (24.69 lb.)                 |
| 5 Nitrogen charge             | -             | [kgf/cm <sup>2</sup> ]           |

### C - ELECTRICAL DATA

|  |                                    |                                    |
|--|------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220-240 V 50 Hz 1 ~ (Single phase) |                                    |
| 2 Starting device type                       | Current Relay                      |                                    |
| 2.1 Starting device                          | QL2-7.8-NTC-15                     |                                    |
| 3 Start capacitor                            | 108-130(330)                       | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 12.5(400)                          | [µF(VAC minimum)]                  |
| 5 Motor protection                           | USP-M12-83                         |                                    |
| 6 Start winding resistance                   | 7.80                               | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 5.20                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50 Hz)        | 22.50                              | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz)     | -                                  | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz)      | -                                  | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | CCC - CE - EAC - UKCA - VDE        |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                                 |          |     |                            |                            |  |                                |  |       |
|---------------------------------|----------|-----|----------------------------|----------------------------|--|--------------------------------|--|-------|
| 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 (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] |
| 3172                            | 799      | 929 | 584                        | 2.79                       | 9.44   | 5.43                           | 1.37                                   | 1.59  |

### E - PERFORMANCE - CURVES

|                               |       |                                 |                 |      |                                       |                            |                          |                                |           |       |
|-------------------------------|-------|---------------------------------|-----------------|------|---------------------------------------|----------------------------|--------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |       |                                 | ASHRAE32<br>Fan |      | (Condensing temperature 35°C (+95°F)) |                            |                          |                                |           |       |
| Evaporating temperature       |       | Cooling capacity (Qe)<br>+/- 5% |                 |      | Input power (We)<br>+/- 5%            | Electric current<br>+/- 5% | Mass flow rate<br>+/- 5% | Efficiency EER & COP<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                         | [kcal/h]        | [W]  | [W]                                   | [A]                        | [kg/h]                   | [Btu/Wh]                       | [kcal/Wh] | [W/W] |
| -40                           | (-40) | 1615                            | 407             | 473  | 348                                   | 1.76                       | 4.77                     | 4.62                           | 1.17      | 1.35  |
| -35                           | (-31) | 2050                            | 517             | 601  | 394                                   | 1.96                       | 6.07                     | 5.22                           | 1.31      | 1.53  |
| -30                           | (-22) | 2599                            | 655             | 761  | 439                                   | 2.16                       | 7.71                     | 5.92                           | 1.49      | 1.74  |
| -25                           | (-13) | 3262                            | 822             | 956  | 485                                   | 2.36                       | 9.70                     | 6.73                           | 1.70      | 1.97  |
| -20                           | (- 4) | 4039                            | 1018            | 1183 | 530                                   | 2.55                       | 12.05                    | 7.61                           | 1.92      | 2.23  |
| -15                           | (+ 5) | 4930                            | 1242            | 1445 | 576                                   | 2.75                       | 14.77                    | 8.56                           | 2.16      | 2.51  |
| -10                           | (+14) | 5935                            | 1496            | 1739 | 622                                   | 2.95                       | 17.86                    | 9.54                           | 2.40      | 2.80  |

|                               |       |                                 |                 |      |  |                            |                          |                                |           |       |
|-------------------------------|-------|---------------------------------|-----------------|------|--|----------------------------|--------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |       |                                 | ASHRAE32<br>Fan |      | (Condensing temperature 45°C (+113°F)) |                            |                          |                                |           |       |
| Evaporating temperature       |       | Cooling capacity (Qe)<br>+/- 5% |                 |      | Input power (We)<br>+/- 5%             | Electric current<br>+/- 5% | Mass flow rate<br>+/- 5% | Efficiency EER & COP<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                         | [kcal/h]        | [W]  | [W]                                    | [A]                        | [kg/h]                   | [Btu/Wh]                       | [kcal/Wh] | [W/W] |
| -40                           | (-40) | 1470                            | 370             | 431  | 354                                    | 1.80                       | 4.34                     | 4.16                           | 1.05      | 1.22  |
| -35                           | (-31) | 1909                            | 481             | 559  | 411                                    | 2.04                       | 5.65                     | 4.65                           | 1.17      | 1.36  |
| -30                           | (-22) | 2452                            | 618             | 718  | 468                                    | 2.28                       | 7.27                     | 5.23                           | 1.32      | 1.53  |
| -25                           | (-13) | 3099                            | 781             | 908  | 526                                    | 2.53                       | 9.21                     | 5.88                           | 1.48      | 1.72  |
| -20                           | (- 4) | 3850                            | 970             | 1128 | 584                                    | 2.79                       | 11.49                    | 6.59                           | 1.66      | 1.93  |
| -15                           | (+ 5) | 4705                            | 1186            | 1379 | 643                                    | 3.05                       | 14.09                    | 7.32                           | 1.85      | 2.15  |
| -10                           | (+14) | 5663                            | 1427            | 1659 | 701                                    | 3.31                       | 17.04                    | 8.08                           | 2.04      | 2.37  |

|                               |       |                                 |                 |      |  |                            |                          |                                |           |       |
|-------------------------------|-------|---------------------------------|-----------------|------|--|----------------------------|--------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |       |                                 | ASHRAE32<br>Fan |      | (Condensing temperature 55°C (+131°F)) |                            |                          |                                |           |       |
| Evaporating temperature       |       | Cooling capacity (Qe)<br>+/- 5% |                 |      | Input power (We)<br>+/- 5%             | Electric current<br>+/- 5% | Mass flow rate<br>+/- 5% | Efficiency EER & COP<br>+/- 7% |           |       |
| °C                            | (°F)  | [Btu/h]                         | [kcal/h]        | [W]  | [W]                                    | [A]                        | [kg/h]                   | [Btu/Wh]                       | [kcal/Wh] | [W/W] |
| -40                           | (-40) | 1296                            | 327             | 380  | 352                                    | 1.78                       | 3.83                     | 3.69                           | 0.93      | 1.08  |
| -35                           | (-31) | 1738                            | 438             | 509  | 420                                    | 2.07                       | 5.14                     | 4.14                           | 1.04      | 1.21  |
| -30                           | (-22) | 2274                            | 573             | 666  | 489                                    | 2.37                       | 6.74                     | 4.65                           | 1.17      | 1.36  |
| -25                           | (-13) | 2904                            | 732             | 851  | 558                                    | 2.68                       | 8.63                     | 5.20                           | 1.31      | 1.52  |
| -20                           | (- 4) | 3627                            | 914             | 1063 | 628                                    | 2.99                       | 10.82                    | 5.78                           | 1.46      | 1.69  |
| -15                           | (+ 5) | 4445                            | 1120            | 1302 | 699                                    | 3.32                       | 13.31                    | 6.37                           | 1.60      | 1.87  |
| -10                           | (+14) | 5356                            | 1350            | 1569 | 770                                    | 3.66                       | 16.11                    | 6.94                           | 1.75      | 2.03  |

### F - EXTERNAL CHARACTERISTICS

|                         |                             |      |                          |
|-------------------------|-----------------------------|------|--------------------------|
| 1 Base plate            | Universal                   |      |                          |
| 2 Tray holder           | No                          |      |                          |
| 3 Connectors            |                             |      |                          |
| 3.1 SUCTION             | 8.15 +0.00/-0.05            | [mm] | (0.321" +0.000"/-0.002") |
| 3.1.1 Material          | Copper                      |      |                          |
| 3.1.2 Shape             | Slanted 42°                 |      |                          |
| 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             | Slanted 0° up + 24° to Back |      |                          |
| 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 42°                 |      |                          |
| 3.4 Oil cooler (Copper) | No                          | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs                |      |                          |