

## COMPRESSOR DEFINITION

|                           |                 |
|---------------------------|-----------------|
| Designation               | NE U2178GKA     |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number        | 955BA76         |

## A - APPLICATION / LIMIT WORKING CONDITIONS

|                                   |               |                                   |                 |
|-----------------------------------|---------------|-----------------------------------|-----------------|
| 1 Type                            |               | Hermetic reciprocating compressor |                 |
| 2 Refrigerant                     |               | R-404A                            |                 |
| 2.1 Max Refrigerant Charge        |               | 350 [g]                           |                 |
| 3 Nominal voltage and frequency   |               | 220-240 / 50                      | [ V / Hz ]      |
| 4 Application type                |               | Low Back Pressure R404A           |                 |
| 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 Expantion device                |               | Capillary tube or Expansion valve |                 |
| 8 Compressor cooling              |               | Operating voltage range           |                 |
| Aplication                        | Ambient Temp. | Cooling                           | 50 Hz   60 Hz   |
| 9 Maximum condensing temperature  |               |                                   |                 |
| 9.1 Operating                     |               | [55]                              | [ °C ]          |
| 9.2 Peak                          |               | [60]                              | [ °C ]          |
| 10 Maximum winding temperature    |               | 130                               | [ °C ]          |

## B - MECHANICAL DATA

|                               |               |                     |
|-------------------------------|---------------|---------------------|
| 1 Commercial designation      | 1             | [hp]                |
| 2 Displacement                | 15.71         | [cm³] (0.959 cu.in) |
| 2.1 Bore [mm]                 | 30.157        |                     |
| 2.2 Stroke [mm]               | 22.000        |                     |
| 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)    | 11.03         | [kg] (24.32 lb.)    |
| 5 Nitrogen charge             | -             | [kgf/cm²]           |

## C - ELETRICAL 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                          | 2284001                            |                                    |
| 3 Start capacitor                            | 108-130(330)                       | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 12.5(450)                          | [µF(VAC minimum)]                  |
| 5 Motor protection                           | USP-M12-83                         |                                    |
| 6 Start winding resistance                   | 11.58                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 5.33                               | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50 Hz)        | 25.00                              | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz)     | 3.60                               | [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 - VDE                          |                                    |

## D - PERFORMANCE - CHECK POINT DATA

| TEST CONDITIONS:<br>@V50Hz     |          |       | ASHRAELBP32<br>Fan                 |                                      | Evaporating temperature<br>(Condensing temperature |                               | -23.3°C (-9.94°F)<br>54.4°C (129.92°F)) |       |
|--------------------------------|----------|-------|------------------------------------|--------------------------------------|----------------------------------------------------|-------------------------------|-----------------------------------------|-------|
| Cooling capacity<br><br>+/- 5% |          |       | Power<br>consumption<br><br>+/- 5% | Current<br>consumption<br><br>+/- 5% | Gas flow<br>rate<br><br>+/- 5%                     | EFFICIENCY RATE<br><br>+/- 7% |                                         |       |
| [Btu/h]                        | [kcal/h] | [W]   | [W]                                | [A]                                  | [kg/h]                                             | [Btu/Wh]                      | [kcal/Wh]                               | [W/W] |
| 3007.0                         | 757.8    | 881.1 | 600.5                              | 2.86                                 | 20.39                                              | 5.01                          | 1.26                                    | 1.47  |

|                                |          |       |                                    |                                      |                                                    |                               |                                |       |
|--------------------------------|----------|-------|------------------------------------|--------------------------------------|----------------------------------------------------|-------------------------------|--------------------------------|-------|
| TEST CONDITIONS:<br>@V50Hz     |          |       | EN12900LBP<br>Fan                  |                                      | Evaporating temperature<br>(Condensing temperature |                               | -35°C (-31°F)<br>40°C (104°F)) |       |
| Cooling capacity<br><br>+/- 5% |          |       | Power<br>consumption<br><br>+/- 5% | Current<br>consumption<br><br>+/- 5% | Gas flow<br>rate<br><br>+/- 5%                     | EFFICIENCY RATE<br><br>+/- 7% |                                |       |
| [Btu/h]                        | [kcal/h] | [W]   | [W]                                | [A]                                  | [kg/h]                                             | [Btu/Wh]                      | [kcal/Wh]                      | [W/W] |
| 1567.0                         | 394.9    | 459.2 | 410.6                              | 2.04                                 | 12.44                                              | 3.82                          | 0.96                           | 1.12  |

## E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@V50Hz |       | ASHRAE32<br>Fan            |          |        | (Condensing temperature 35°C (+95°F) ) |                               |                         |                           |           |       |
|----------------------------|-------|----------------------------|----------|--------|----------------------------------------|-------------------------------|-------------------------|---------------------------|-----------|-------|
| Evaporating temperature    |       | Cooling capacity<br>+/- 5% |          |        | Power consumption<br>+/- 5%            | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C                         | (°F)  | [Btu/h]                    | [kcal/h] | [W]    | [W]                                    | [A]                           | [kg/h]                  | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -40                        | (-40) | 1397.0                     | 352.0    | 409.4  | 350.5                                  | 1.80                          | 9.30                    | 3.90                      | 0.98      | 1.14  |
| -35                        | (-31) | 1858.8                     | 468.4    | 544.7  | 403.7                                  | 2.00                          | 12.50                   | 4.60                      | 1.16      | 1.35  |
| -30                        | (-22) | 2439.3                     | 614.7    | 714.8  | 458.5                                  | 2.20                          | 16.50                   | 5.30                      | 1.34      | 1.55  |
| -25                        | (-13) | 3138.2                     | 790.8    | 919.6  | 514.7                                  | 2.50                          | 21.30                   | 6.00                      | 1.51      | 1.76  |
| -20                        | (- 4) | 3955.7                     | 996.8    | 1159.1 | 572.5                                  | 2.70                          | 27.00                   | 6.90                      | 1.74      | 2.02  |
| -15                        | (+ 5) | 4891.6                     | 1232.7   | 1433.4 | 631.9                                  | 3.00                          | 33.60                   | 7.70                      | 1.94      | 2.26  |
| -10                        | (+14) | 5946.0                     | 1498.4   | 1742.3 | 692.8                                  | 3.30                          | 41.10                   | 8.50                      | 2.14      | 2.49  |

| TEST CONDITIONS:<br>@V50Hz |       | ASHRAE32<br>Fan  |          |        | (Condensing temperature 45°C (+113°F) ) |                     |               |                 |           |       |
|----------------------------|-------|------------------|----------|--------|-----------------------------------------|---------------------|---------------|-----------------|-----------|-------|
| Evaporating temperature    |       | Cooling capacity |          |        | Power consumption                       | Current consumption | Gas flow rate | EFFICIENCY RATE |           |       |
|                            |       | +/- 5%           |          |        | +/- 5%                                  | +/- 5%              | +/- 5%        | +/- 7%          |           |       |
| °C                         | (°F)  | [Btu/h]          | [kcal/h] | [W]    | [W]                                     | [A]                 | [kg/h]        | [Btu/Wh]        | [kcal/Wh] | [W/W] |
| -40                        | (-40) | 1244.0           | 313.5    | 364.5  | 351.4                                   | 1.70                | 8.30          | 3.50            | 0.88      | 1.03  |
| -35                        | (-31) | 1701.0           | 428.7    | 498.4  | 413.4                                   | 2.00                | 11.40         | 4.10            | 1.03      | 1.20  |
| -30                        | (-22) | 2271.5           | 572.4    | 665.6  | 478.3                                   | 2.30                | 15.30         | 4.70            | 1.18      | 1.38  |
| -25                        | (-13) | 2955.4           | 744.8    | 866.0  | 546.2                                   | 2.60                | 20.00         | 5.40            | 1.36      | 1.58  |
| -20                        | (- 4) | 3752.6           | 945.7    | 1099.6 | 617.1                                   | 2.90                | 25.50         | 6.00            | 1.51      | 1.76  |
| -15                        | (+ 5) | 4663.1           | 1175.1   | 1366.4 | 691.0                                   | 3.20                | 31.90         | 6.70            | 1.69      | 1.96  |
| -10                        | (+14) | 5686.9           | 1433.1   | 1666.4 | 767.9                                   | 3.60                | 39.20         | 7.40            | 1.86      | 2.17  |

## E - PERFORMANCE - CURVES

| TEST CONDITIONS:        |       | ASHRAE32                   |          |        | (Condensing temperature 55°C (+131°F) ) |                               |                         |                           |           |       |
|-------------------------|-------|----------------------------|----------|--------|-----------------------------------------|-------------------------------|-------------------------|---------------------------|-----------|-------|
| @V50Hz                  |       | Fan                        |          |        |                                         |                               |                         |                           |           |       |
| Evaporating temperature |       | Cooling capacity<br>+/- 5% |          |        | Power consumption<br>+/- 5%             | Current consumption<br>+/- 5% | Gas flow rate<br>+/- 5% | EFFICIENCY RATE<br>+/- 7% |           |       |
| °C                      | (°F)  | [Btu/h]                    | [kcal/h] | [W]    | [W]                                     | [A]                           | [kg/h]                  | [Btu/Wh]                  | [kcal/Wh] | [W/W] |
| -40                     | (-40) | 1066.0                     | 268.6    | 312.4  | 343.6                                   | 1.80                          | 7.10                    | 3.10                      | 0.78      | 0.91  |
| -35                     | (-31) | 1514.5                     | 381.7    | 443.8  | 415.5                                   | 2.10                          | 10.10                   | 3.60                      | 0.91      | 1.05  |
| -30                     | (-22) | 2071.3                     | 522.0    | 606.9  | 492.0                                   | 2.40                          | 13.90                   | 4.20                      | 1.06      | 1.23  |
| -25                     | (-13) | 2736.3                     | 689.5    | 801.8  | 572.8                                   | 2.70                          | 18.50                   | 4.70                      | 1.18      | 1.38  |
| -20                     | (- 4) | 3509.5                     | 884.4    | 1028.4 | 658.1                                   | 3.10                          | 23.80                   | 5.30                      | 1.34      | 1.55  |
| -15                     | (+ 5) | 4390.8                     | 1106.5   | 1286.6 | 747.9                                   | 3.50                          | 30.00                   | 5.80                      | 1.46      | 1.70  |
| -10                     | (+14) | 5380.1                     | 1355.8   | 1576.5 | 842.1                                   | 3.90                          | 37.00                   | 6.30                      | 1.59      | 1.85  |

## F - EXTERNAL CHARACTERISTICS

|                         |                  |      |                          |
|-------------------------|------------------|------|--------------------------|
| 1 Base plate            | Universal        |      |                          |
| 2 Tray holder           | No               |      |                          |
| 3 Connectors            |                  |      |                          |
| 3.1 SUCTION             | 8.1 +0.10/+0.00  | [mm] | (0.319" +0.004"/+0.000") |
| 3.1.1 Material          | Copper           |      |                          |
| 3.1.2 Shape             | Slanted 42°      |      |                          |
| 3.2 DISCHARGE           | 6.45 +0.10/+0.00 | [mm] | (0.254" +0.004"/+0.000") |
| 3.2.1 Material          | Copper           |      |                          |
| 3.2.2 Shape             | Straight         |      |                          |
| 3.3 PROCESS             | 6.45 +0.10/+0.00 | [mm] | (0.254" +0.004"/+0.000") |
| 3.3.1 Material          | Copper           |      |                          |
| 3.3.2 Shape             | Slanted 42°      |      |                          |
| 3.4 Oil cooler (Copper) | No               | [mm] |                          |
| 3.5 Connector sealing   | Rubber Plugs     |      |                          |