

COMPRESSOR DEFINITION

| | |
|---------------------------|-----------------|
| Designation | NE U2178U |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number | 513308209 |

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 - High 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 ²] (262 psig) | / °C - °F |
| 9.2 Peak | 20.6 | [kgf/cm ²] (293 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|---------------|----------------------------------|
| 1 Commercial designation | 1 | [hp] |
| 2 Displacement | 18.70 | [cm ³] (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) | 11.6 | [kg] (25.57 lb.) |
| 5 Nitrogen charge | - | [kgf/cm ²] |

C - ELETRICAL DATA

| | | |
|--|------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220-240 V 50 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Voltage Relay | |
| 2.1 Starting device | RVA6M3C-114 | |
| 3 Start capacitor | 108-130(330) | [µF(VAC minimum)] |
| 4 Run capacitor | 12.5(400) | [µF(VAC minimum)] |
| 5 Motor protection | USP-Y01-83 | |
| 6 Start winding resistance | 10.42 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 5.23 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50 Hz) | 21.00 | [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 | | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAELBP32 Fan | | Evaporating temperature (Condensing temperature | | -23.3°C (-9.94°F) 54.4°C (129.92°F) | |
| Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| 3087 | 778 | 905 | 594 | 2.80 | 9.19 | 5.20 | 1.31 | 1.52 |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|-----------------|------|---------------------------------------|-------------------------------|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 Fan | | (Condensing temperature 35°C (+95°F)) | | | | | |
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -40 | (-40) | 1548 | 390 | 453 | 338 | 1.70 | 4.57 | 4.56 | 1.15 | 1.34 |
| -35 | (-31) | 1973 | 497 | 578 | 391 | 1.92 | 5.84 | 5.05 | 1.27 | 1.48 |
| -30 | (-22) | 2507 | 632 | 735 | 443 | 2.15 | 7.44 | 5.66 | 1.43 | 1.66 |
| -25 | (-13) | 3151 | 794 | 923 | 495 | 2.38 | 9.37 | 6.36 | 1.60 | 1.86 |
| -20 | (- 4) | 3904 | 984 | 1144 | 547 | 2.61 | 11.65 | 7.13 | 1.80 | 2.09 |
| -15 | (+ 5) | 4767 | 1201 | 1397 | 599 | 2.84 | 14.28 | 7.96 | 2.01 | 2.33 |
| -10 | (+14) | 5739 | 1446 | 1682 | 650 | 3.08 | 17.27 | 8.82 | 2.22 | 2.58 |

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|-----------------|------|--|-------------------------------|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 Fan | | (Condensing temperature 45°C (+113°F)) | | | | | |
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -40 | (-40) | 1434 | 361 | 420 | 364 | 1.81 | 4.23 | 3.96 | 1.00 | 1.16 |
| -35 | (-31) | 1848 | 466 | 541 | 418 | 2.04 | 5.47 | 4.43 | 1.12 | 1.30 |
| -30 | (-22) | 2368 | 597 | 694 | 474 | 2.28 | 7.02 | 4.98 | 1.26 | 1.46 |
| -25 | (-13) | 2994 | 755 | 877 | 534 | 2.54 | 8.90 | 5.60 | 1.41 | 1.64 |
| -20 | (- 4) | 3727 | 939 | 1092 | 595 | 2.82 | 11.12 | 6.25 | 1.57 | 1.83 |
| -15 | (+ 5) | 4566 | 1151 | 1338 | 660 | 3.11 | 13.68 | 6.92 | 1.74 | 2.03 |
| -10 | (+14) | 5511 | 1389 | 1615 | 727 | 3.42 | 16.58 | 7.59 | 1.91 | 2.22 |

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|-----------------|------|--|-------------------------------|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 Fan | | (Condensing temperature 55°C (+131°F)) | | | | | |
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -40 | (-40) | 1347 | 339 | 395 | 379 | 1.87 | 3.98 | 3.54 | 0.89 | 1.04 |
| -35 | (-31) | 1739 | 438 | 509 | 437 | 2.11 | 5.14 | 3.98 | 1.00 | 1.17 |
| -30 | (-22) | 2233 | 563 | 654 | 500 | 2.39 | 6.62 | 4.47 | 1.13 | 1.31 |
| -25 | (-13) | 2831 | 713 | 830 | 569 | 2.70 | 8.42 | 4.98 | 1.26 | 1.46 |
| -20 | (- 4) | 3532 | 890 | 1035 | 643 | 3.03 | 10.53 | 5.50 | 1.39 | 1.61 |
| -15 | (+ 5) | 4335 | 1093 | 1270 | 723 | 3.39 | 12.98 | 6.01 | 1.51 | 1.76 |
| -10 | (+14) | 5242 | 1321 | 1536 | 808 | 3.78 | 15.77 | 6.47 | 1.63 | 1.90 |

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 | | |