

COMPRESSOR DEFINITION

| | |
|---------------------------|-----------------|
| Designation | NT 2180U |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number | 843AA04 |

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 | CSIR | | |
| 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 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 | 22.37 | [cm ³] (1.365 cu.in) |
| 2.1 Bore [mm] | 36.990 | |
| 2.2 Stroke [mm] | 20.830 | |
| 3 Lubricant charge | 450 | [ml] (15.22 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | AB / ISO32 | |
| 4 Weight (with oil charge) | 18 | [kg] (39.68 lb.) |
| 5 Nitrogen charge | - | [kgf/cm ²] |

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 | MTRPH-59 | |
| 3 Start capacitor | 43-53(330) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | T0624/G6 | |
| 6 Start winding resistance | 8.56 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 1.82 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50 Hz) | 35.00 | [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 | CCC - VDE | |

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 (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| 3176 | 800 | 931 | 697 | 4.60 | 9.45 | 4.56 | 1.15 | 1.34 |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|-------|---------------------------------|-----------------|------|---------------------------------------|----------------------------|--------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 Fan | | (Condensing temperature 35°C (+95°F)) | | | | | |
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -40 | (-40) | 1621 | 408 | 475 | 417 | 3.77 | 4.79 | 3.87 | 0.98 | 1.14 |
| -35 | (-31) | 2086 | 526 | 611 | 480 | 3.93 | 6.17 | 4.36 | 1.10 | 1.28 |
| -30 | (-22) | 2686 | 677 | 787 | 543 | 4.11 | 7.97 | 4.96 | 1.25 | 1.45 |
| -25 | (-13) | 3420 | 862 | 1002 | 605 | 4.30 | 10.17 | 5.65 | 1.42 | 1.66 |
| -20 | (- 4) | 4287 | 1080 | 1256 | 667 | 4.51 | 12.79 | 6.42 | 1.62 | 1.88 |
| -15 | (+ 5) | 5288 | 1333 | 1550 | 728 | 4.73 | 15.84 | 7.26 | 1.83 | 2.13 |
| -10 | (+14) | 6423 | 1619 | 1882 | 789 | 4.96 | 19.33 | 8.15 | 2.05 | 2.39 |

| | | | | | | | | | | |
|-------------------------------|-------|---------------------------------|-----------------|------|--|----------------------------|--------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 Fan | | (Condensing temperature 45°C (+113°F)) | | | | | |
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -40 | (-40) | 1445 | 364 | 424 | 425 | 3.80 | 4.27 | 3.39 | 0.86 | 0.99 |
| -35 | (-31) | 1907 | 481 | 559 | 496 | 3.98 | 5.64 | 3.85 | 0.97 | 1.13 |
| -30 | (-22) | 2485 | 626 | 728 | 568 | 4.19 | 7.37 | 4.37 | 1.10 | 1.28 |
| -25 | (-13) | 3180 | 801 | 932 | 641 | 4.42 | 9.46 | 4.95 | 1.25 | 1.45 |
| -20 | (- 4) | 3991 | 1006 | 1169 | 715 | 4.67 | 11.91 | 5.58 | 1.41 | 1.64 |
| -15 | (+ 5) | 4917 | 1239 | 1441 | 789 | 4.95 | 14.73 | 6.23 | 1.57 | 1.83 |
| -10 | (+14) | 5960 | 1502 | 1746 | 865 | 5.25 | 17.93 | 6.90 | 1.74 | 2.02 |

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|-------------------------------|-------|---------------------------------|-----------------|------|--|----------------------------|--------------------------|--------------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 Fan | | (Condensing temperature 55°C (+131°F)) | | | | | |
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -40 | (-40) | 1224 | 308 | 359 | 417 | 3.79 | 3.61 | 2.94 | 0.74 | 0.86 |
| -35 | (-31) | 1689 | 426 | 495 | 498 | 3.99 | 5.00 | 3.39 | 0.85 | 0.99 |
| -30 | (-22) | 2252 | 568 | 660 | 581 | 4.23 | 6.68 | 3.87 | 0.97 | 1.13 |
| -25 | (-13) | 2915 | 735 | 854 | 667 | 4.50 | 8.67 | 4.37 | 1.10 | 1.28 |
| -20 | (- 4) | 3676 | 926 | 1077 | 754 | 4.81 | 10.96 | 4.88 | 1.23 | 1.43 |
| -15 | (+ 5) | 4535 | 1143 | 1329 | 844 | 5.15 | 13.58 | 5.38 | 1.36 | 1.58 |
| -10 | (+14) | 5493 | 1384 | 1609 | 935 | 5.52 | 16.52 | 5.86 | 1.48 | 1.72 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|------------------|------|--------------------------|
| 1 Base plate | Universal | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 9.6 +0.07/+0.00 | [mm] | (0.378" +0.003"/+0.000") |
| 3.1.1 Material | Copper | | |
| 3.1.2 Shape | Vertical | | |
| 3.2 DISCHARGE | 6.42 +0.08/+0.00 | [mm] | (0.253" +0.003"/+0.000") |
| 3.2.1 Material | Copper | | |
| 3.2.2 Shape | Vertical | | |
| 3.3 PROCESS | 6.42 +0.08/+0.00 | [mm] | (0.253" +0.003"/+0.000") |
| 3.3.1 Material | Copper | | |
| 3.3.2 Shape | Vertical | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |