

### COMPRESSOR DEFINITION

|                           |                    |
|---------------------------|--------------------|
| Designation               | <b>NT 2180UV</b>   |
| Nominal Voltage/Frequency | <b>115 V 60 Hz</b> |
| Engineering Number        | <b>842LG02</b>     |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|                                    |                                   |                                   |           |
|------------------------------------|-----------------------------------|-----------------------------------|-----------|
| 1 Type                             | Hermetic reciprocating compressor |                                   |           |
| 2 Refrigerant                      | R-290                             |                                   |           |
| 3 Nominal voltage and frequency    | 115 / 60                          | [ 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                | 22.37         | [cm <sup>3</sup> ] (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 | ESTER / ISO22 |  |
| 4 Weight (with oil charge)    | 16.5          | [kg] (36.38 lb.)                           |
| 5 Nitrogen charge             | 0.2 to 0.3    | [kgf/cm <sup>2</sup> ] (2.84 to 4.27 psig) |

### C - ELETRICAL DATA

|  |                               |                                    |
|--|-------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 115 V 60 Hz 1~ (Single phase) |                                    |
| 2 Starting device type                       | Voltage Relay                 |                                    |
| 2.1 Starting device                          | RVA2AE3C-105                  |                                    |
| 3 Start capacitor                            | 243-292(250)                  | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 20(400)                       | [µF(VAC minimum)]                  |
| 5 Motor protection                           | MST00AFK                      |                                    |
| 6 Start winding resistance                   | 2.66                          | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 0.43                          | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (60 Hz)        | 54.50                         | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz)     | 9.60                          | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz)      | -                             | [A] - Measured according to UL 984 |
| 11 Approval boards certification             | CCC - UL                      |                                    |

### D - PERFORMANCE - CHECK POINT DATA

| TEST CONDITIONS:<br>@115V60Hz |          |     | ARILBP<br>Fan                  |                                  | Evaporating temperature<br>(Condensing temperature |                           | -23.3°C (-9.94°F)<br>48.9°C (120.02°F) |       |  |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|--|
| Cooling capacity<br>+/- 5%    |          |     | Power<br>consumption<br>+/- 5% | Current<br>consumption<br>+/- 5% | Gas flow<br>rate<br>+/- 5%                         | EFFICIENCY RATE<br>+/- 7% |  |       |  |
| [Btu/h]                       | [kcal/h] | [W] | [W]                            | [A]                              | [kg/h]   | [Btu/Wh]                  | [kcal/Wh]                              | [W/W] |  |
| 2840                          | 716      | 832 | 746                            | 7.91                             | 11.53  | 3.81                      | 0.96                                   | 1.12  |  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@115V60Hz |       |                            | ARI4<br>Fan |      | (Condensing temperature 35°C (+95°F)) |                                  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|-------------|------|---------------------------------------|----------------------------------|----------------------------|---------------------------|-----------|-------|
| Evaporating<br>temperature    |       | Cooling capacity<br>+/- 5% |             |      | Power<br>consumption<br>+/- 5%        | Current<br>consumption<br>+/- 5% | Gas flow<br>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) | 1627                       | 410         | 477  | 479                                   | 5.98                             | 5.64                       | 3.39                      | 0.85      | 0.99  |
| -35                           | (-31) | 2051                       | 517         | 601  | 538                                   | 6.38                             | 7.14                       | 3.83                      | 0.97      | 1.12  |
| -30                           | (-22) | 2625                       | 661         | 769  | 603                                   | 6.85                             | 9.17                       | 4.36                      | 1.10      | 1.28  |
| -25                           | (-13) | 3347                       | 843         | 981  | 676                                   | 7.40                             | 11.75                      | 4.95                      | 1.25      | 1.45  |
| -20                           | (- 4) | 4219                       | 1063        | 1236 | 755                                   | 8.02                             | 14.90                      | 5.58                      | 1.41      | 1.63  |
| -15                           | (+ 5) | 5239                       | 1320        | 1535 | 841                                   | 8.71                             | 18.63                      | 6.22                      | 1.57      | 1.82  |
| -10                           | (+14) | 6408                       | 1615        | 1878 | 934                                   | 9.48                             | 22.97                      | 6.87                      | 1.73      | 2.01  |

| TEST CONDITIONS:<br>@115V60Hz |       |                            | ARI4<br>Fan |      | (Condensing temperature 45°C (+113°F)) |                                  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|-------------|------|--|----------------------------------|----------------------------|---------------------------|-----------|-------|
| Evaporating<br>temperature    |       | Cooling capacity<br>+/- 5% |             |      | Power<br>consumption<br>+/- 5%         | Current<br>consumption<br>+/- 5% | Gas flow<br>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) | 1351                       | 340         | 396  | 487                                    | 6.06                             | 5.16                       | 2.77                      | 0.70      | 0.81  |
| -35                           | (-31) | 1738                       | 438         | 509  | 557                                    | 6.52                             | 6.68                       | 3.12                      | 0.79      | 0.91  |
| -30                           | (-22) | 2248                       | 566         | 659  | 633                                    | 7.07                             | 8.68                       | 3.55                      | 0.89      | 1.04  |
| -25                           | (-13) | 2880                       | 726         | 844  | 716                                    | 7.70                             | 11.18                      | 4.02                      | 1.01      | 1.18  |
| -20                           | (- 4) | 3636                       | 916         | 1065 | 804                                    | 8.41                             | 14.20                      | 4.52                      | 1.14      | 1.32  |
| -15                           | (+ 5) | 4514                       | 1137        | 1323 | 899                                    | 9.20                             | 17.76                      | 5.03                      | 1.27      | 1.47  |
| -10                           | (+14) | 5514                       | 1390        | 1616 | 1000                                   | 10.08                            | 21.88                      | 5.52                      | 1.39      | 1.62  |

| TEST CONDITIONS:<br>@115V60Hz |       |                            | ARI4<br>Fan |      | (Condensing temperature 55°C (+131°F)) |                                  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|-------------|------|--|----------------------------------|----------------------------|---------------------------|-----------|-------|
| Evaporating<br>temperature    |       | Cooling capacity<br>+/- 5% |             |      | Power<br>consumption<br>+/- 5%         | Current<br>consumption<br>+/- 5% | Gas flow<br>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) | 1046                       | 264         | 306  | 491                                    | 6.21                             | 4.50                       | 2.14                      | 0.54      | 0.63  |
| -35                           | (-31) | 1387                       | 349         | 406  | 573                                    | 6.70                             | 5.99                       | 2.42                      | 0.61      | 0.71  |
| -30                           | (-22) | 1824                       | 460         | 534  | 661                                    | 7.28                             | 7.91                       | 2.75                      | 0.69      | 0.81  |
| -25                           | (-13) | 2358                       | 594         | 691  | 755                                    | 7.94                             | 10.28                      | 3.12                      | 0.79      | 0.91  |
| -20                           | (- 4) | 2988                       | 753         | 876  | 854                                    | 8.70                             | 13.13                      | 3.51                      | 0.88      | 1.03  |
| -15                           | (+ 5) | 3715                       | 936         | 1089 | 959                                    | 9.55                             | 16.47                      | 3.88                      | 0.98      | 1.14  |
| -10                           | (+14) | 4538                       | 1144        | 1330 | 1070                                   | 10.49                            | 20.32                      | 4.23                      | 1.07      | 1.24  |

### 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     |      |                          |