

### COMPRESSOR DEFINITION

|                           |                        |
|---------------------------|------------------------|
| Designation               | <b>NB U1116Y</b>       |
| Nominal Voltage/Frequency | <b>220-240 V 50 Hz</b> |
| Engineering Number        | <b>815CA47</b>         |

### A - APPLICATION / LIMIT WORKING CONDITIONS

|  |                                   |                                   |           |
|--|-----------------------------------|-----------------------------------|-----------|
| 1 Type                                     | Hermetic reciprocating compressor |                                   |           |
| 2 Refrigerant                              | R-600a                            |                                   |           |
| 3 Nominal voltage and frequency            | 220-240 / 50                      | [ V / Hz ]                        |           |
| 4 Application type                         | Low Back Pressure                 |                                   |           |
| 4.1 Evaporating temperature range          | -35°C to -10°C                    | (-31°F to 14°F)                   |           |
| 5 Motor type                               | RSCR                              |                                   |           |
| 6 Starting torque                          | LST - Low Starting Torque         |                                   |           |
| 7 Expansion device                         | Capillary tube                    |                                   |           |
| 8 Compressor cooling                       | Operating voltage range           |                                   |           |
|  |                                   | 50 Hz                             | 60 Hz     |
| 8.1 LBP (32°C Ambient temperature)         | Static                            | 198 to 254 V                      | -         |
| 8.2 LBP (43°C Ambient temperature)         | Static                            | 198 to 254 V                      | -         |
| 8.3 HBP (32°C Ambient temperature)         | -                                 | -                                 | -         |
| 8.4 HBP (43°C Ambient temperature)         | -                                 | -                                 | -         |
| 9 Maximum condensing pressures/temperature |                                   |                                   |           |
| 9.1 Operating (gauge)                      | 7.7                               | [kgf/cm <sup>2</sup> ] (109 psig) | / °C - °F |
| 9.2 Peak (gauge)                           | 9.8                               | [kgf/cm <sup>2</sup> ] (139 psig) | / °C - °F |
| 10 Maximum winding temperature             | 130                               | [ °C ]                            |           |

### B - MECHANICAL DATA

|                               |                |                                  |
|-------------------------------|----------------|----------------------------------|
| 1 Commercial designation      |                | [hp]                             |
| 2 Displacement                | 12.11          | [cm <sup>3</sup> ] (0.739 cu.in) |
| 2.1 Bore [mm]                 | 27.775         |                                  |
| 2.2 Stroke [mm]               | 20.000         |                                  |
| 3 Lubricant charge            | 280            | [ml] (9.47 fl.oz.)               |
| 3.1 Lubricants approved       |                |                                  |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO5 |                                  |
| 4 Weight (with oil charge)    | 10.73          | [kg] (23.66 lb.)                 |
| 5 Nitrogen charge             | -              | [kgf/cm <sup>2</sup> ]           |

### C - ELETRICAL DATA

|  |                                    |                                    |
|--|------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220-240 V 50 Hz 1 ~ (Single phase) |                                    |
| 2 Starting device type                       | PTC                                |                                    |
| 2.1 Starting device                          | 2019                               |                                    |
| 3 Start capacitor                            | -                                  | [µF(VAC minimum)]                  |
| 4 Run capacitor                              | 4(450)                             | [µF(VAC minimum)]                  |
| 5 Motor protection                           | AD55BU10                           |                                    |
| 6 Start winding resistance                   | 20.90                              | [Ω at 25°C (77°F)] +/- 8%          |
| 7 Run winding resistance                     | 18.70                              | [Ω at 25°C (77°F)] +/- 8%          |
| 8 LRA - Locked rotor amperage (50 Hz)        | -                                  | [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             | VDE                                |                                    |

### D - PERFORMANCE - CHECK POINT DATA

|                               |          |     |                                |                                  |  |                           |  |       |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS:<br>@220V50Hz |          |     | ASHRAELBP32<br>Static          |                                  | Evaporating temperature<br>(Condensing temperature |                           | -23.3°C (-9.94°F)<br>54.4°C (129.92°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] |
| 699                           | 176      | 205 | 122                            | 0.56                             | 2.19   | 5.72                      | 1.44                                   | 1.68  |

### E - PERFORMANCE - CURVES

|                               |       |                            |          |     |                                |                                       |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|---------------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |       | ASHRAE32<br>Static         |          |     |                                | (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] |
| -35                           | (-31) | 433                        | 109      | 127 | 79                             | 0.37                                  | 1.36                       | 5.48                      | 1.38      | 1.61  |
| -30                           | (-22) | 542                        | 137      | 159 | 91                             | 0.42                                  | 1.70                       | 6.01                      | 1.52      | 1.76  |
| -25                           | (-13) | 695                        | 175      | 204 | 103                            | 0.47                                  | 2.18                       | 6.79                      | 1.71      | 1.99  |
| -20                           | (- 4) | 894                        | 225      | 262 | 115                            | 0.53                                  | 2.81                       | 7.77                      | 1.96      | 2.28  |
| -15                           | (+ 5) | 1141                       | 287      | 334 | 127                            | 0.58                                  | 3.59                       | 8.94                      | 2.25      | 2.62  |
| -10                           | (+14) | 1437                       | 362      | 421 | 140                            | 0.63                                  | 4.53                       | 10.28                     | 2.59      | 3.01  |

|                               |       |                            |          |     |                                |  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |       | ASHRAE32<br>Static         |          |     |                                | (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] |
| -35                           | (-31) | 424                        | 107      | 124 | 84                             | 0.39                                   | 1.33                       | 5.08                      | 1.28      | 1.49  |
| -30                           | (-22) | 531                        | 134      | 156 | 97                             | 0.45                                   | 1.67                       | 5.51                      | 1.39      | 1.62  |
| -25                           | (-13) | 678                        | 171      | 199 | 111                            | 0.51                                   | 2.13                       | 6.13                      | 1.55      | 1.80  |
| -20                           | (- 4) | 867                        | 219      | 254 | 125                            | 0.57                                   | 2.72                       | 6.91                      | 1.74      | 2.02  |
| -15                           | (+ 5) | 1100                       | 277      | 322 | 140                            | 0.64                                   | 3.46                       | 7.82                      | 1.97      | 2.29  |
| -10                           | (+14) | 1379                       | 348      | 404 | 156                            | 0.71                                   | 4.35                       | 8.83                      | 2.23      | 2.59  |

|                               |       |                            |          |     |                                |  |                            |                           |           |       |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS:<br>@220V50Hz |       | ASHRAE32<br>Static         |          |     |                                | (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] |
| -35                           | (-31) | 390                        | 98       | 114 | 86                             | 0.40                                   | 1.22                       | 4.53                      | 1.14      | 1.33  |
| -30                           | (-22) | 499                        | 126      | 146 | 101                            | 0.47                                   | 1.56                       | 4.95                      | 1.25      | 1.45  |
| -25                           | (-13) | 645                        | 162      | 189 | 117                            | 0.54                                   | 2.02                       | 5.51                      | 1.39      | 1.61  |
| -20                           | (- 4) | 828                        | 209      | 243 | 134                            | 0.61                                   | 2.60                       | 6.16                      | 1.55      | 1.81  |
| -15                           | (+ 5) | 1052                       | 265      | 308 | 152                            | 0.69                                   | 3.31                       | 6.89                      | 1.74      | 2.02  |
| -10                           | (+14) | 1318                       | 332      | 386 | 172                            | 0.78                                   | 4.16                       | 7.67                      | 1.93      | 2.25  |

### E - PERFORMANCE - CURVES

| TEST CONDITIONS:<br>@220V50Hz |       | ASHRAE32<br>Static         |          |     | (Condensing temperature 65°C (+149°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] |
| -35                           | (-31) | 330                        | 83       | 97  | 87                                      | 0.41                          | 1.03                    | 3.77                      | 0.95      | 1.11  |
| -30                           | (-22) | 447                        | 113      | 131 | 104                                     | 0.48                          | 1.40                    | 4.28                      | 1.08      | 1.25  |
| -25                           | (-13) | 595                        | 150      | 174 | 122                                     | 0.56                          | 1.87                    | 4.85                      | 1.22      | 1.42  |
| -20                           | (- 4) | 777                        | 196      | 228 | 142                                     | 0.65                          | 2.44                    | 5.46                      | 1.38      | 1.60  |
| -15                           | (+ 5) | 996                        | 251      | 292 | 164                                     | 0.74                          | 3.14                    | 6.10                      | 1.54      | 1.79  |
| -10                           | (+14) | 1253                       | 316      | 367 | 187                                     | 0.85                          | 3.96                    | 6.73                      | 1.70      | 1.97  |

### F - EXTERNAL CHARACTERISTICS

|                         |                                |      |                          |
|-------------------------|--------------------------------|------|--------------------------|
| 1 Base plate            | European Standard              |      |                          |
| 2 Tray holder           | No                             |      |                          |
| 3 Connectors            |                                |      |                          |
| 3.1 SUCTION             | 6.1 +0.10/+0.00                | [mm] | (0.240" +0.004"/+0.000") |
| 3.1.1 Material          | Copper                         |      |                          |
| 3.1.2 Shape             | Slanted 42°                    |      |                          |
| 3.2 DISCHARGE           | 4.94 +0.08/-0.08               | [mm] | (0.194" +0.003"/-0.003") |
| 3.2.1 Material          | Copper                         |      |                          |
| 3.2.2 Shape             | Slanted parallel to Base Plate |      |                          |
| 3.3 PROCESS             | 6.1 +0.10/+0.00                | [mm] | (0.240" +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                   |      |                          |