

COMPRESSOR DEFINITION

| | |
|---------------------------|------------------------|
| Designation | FF US80HAK |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number | 513209000 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|---|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-134a | | |
| 3 Nominal voltage and frequency | 115-127 / 60 | [V / Hz] | |
| 4 Application type | Low-Medium Back Pressure (Light Commercial) | | |
| 4.1 Evaporating temperature range | -35°C to 0°C | (-31°F to 32°F) | |
| 5 Motor type | RSIR-CSIR | | |
| 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 | - | 103 to 140 V |
| 8.2 LBP (43°C Ambient temperature) | Static | - | 103 to 140 V |
| 8.3 HBP (32°C Ambient temperature) | - | - | - |
| 8.4 HBP (43°C Ambient temperature) | - | - | - |
| 9 Maximum condensing temperature | | | |
| 9.1 Operating | 14.2 | [kgf/cm ²] (202 psig) | / °C - °F |
| 9.2 Peak | 15.9 | [kgf/cm ²] (226 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|---------------|--|
| 1 Commercial designation | 1/4+ | [hp] |
| 2 Displacement | 6.76 | [cm ³] (0.413 cu.in) |
| 2.1 Bore [mm] | 22.500 | |
| 2.2 Stroke [mm] | 17.000 | |
| 3 Lubricant charge | 230 | [ml] (7.78 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 | |
| 4 Weight (with oil charge) | 10 | [kg] (22.05 lb.) |
| 5 Nitrogen charge | 0.2 to 0.3 | [kgf/cm ²] (2.84 to 4.27 psig) |

C - ELETRICAL DATA

| | | |
|--|------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 115-127 V 60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Current Relay | |
| 2.1 Starting device | 213516094/213516132 | |
| 3 Start capacitor | 233-280(140) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | MSP36ALZ-5590 | |
| 6 Start winding resistance | 6.99 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 3.45 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 32.00 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | 5.08 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | 5.52 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CE - IMTRO - TUV - UKCA - UL | |

D - PERFORMANCE - CHECK POINT DATA

| TEST CONDITIONS: @115V60Hz | | | ASHRAELBP32 Static | | 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] |
| 807 | 203 | 236 | 164 | 2.35 | 4.59 | 4.91 | 1.24 | 1.44 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @115V60Hz | | ASHRAE32 Static | | | | (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] |
| -35 | (-31) | 489 | 123 | 143 | 111 | 2.13 | 2.77 | 4.37 | 1.10 | 1.28 |
| -30 | (-22) | 652 | 164 | 191 | 128 | 2.19 | 3.70 | 5.08 | 1.28 | 1.49 |
| -25 | (-13) | 857 | 216 | 251 | 145 | 2.26 | 4.87 | 5.92 | 1.49 | 1.74 |
| -20 | (- 4) | 1110 | 280 | 325 | 162 | 2.35 | 6.32 | 6.89 | 1.74 | 2.02 |
| -15 | (+ 5) | 1418 | 357 | 415 | 179 | 2.45 | 8.09 | 7.97 | 2.01 | 2.33 |
| -10 | (+14) | 1787 | 450 | 524 | 195 | 2.55 | 10.24 | 9.17 | 2.31 | 2.69 |
| -5 | (+23) | 2225 | 561 | 652 | 212 | 2.65 | 12.80 | 10.48 | 2.64 | 3.07 |
| 0 | (+32) | 2738 | 690 | 802 | 229 | 2.75 | 15.83 | 11.91 | 3.00 | 3.49 |

| TEST CONDITIONS: @115V60Hz | | ASHRAE32 Static | | | | (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] |
| -35 | (-31) | 429 | 108 | 126 | 112 | 2.13 | 2.43 | 3.85 | 0.97 | 1.13 |
| -30 | (-22) | 591 | 149 | 173 | 131 | 2.19 | 3.35 | 4.49 | 1.13 | 1.32 |
| -25 | (-13) | 793 | 200 | 232 | 151 | 2.28 | 4.50 | 5.22 | 1.31 | 1.53 |
| -20 | (- 4) | 1042 | 263 | 305 | 172 | 2.39 | 5.93 | 6.03 | 1.52 | 1.77 |
| -15 | (+ 5) | 1345 | 339 | 394 | 193 | 2.52 | 7.68 | 6.92 | 1.74 | 2.03 |
| -10 | (+14) | 1708 | 430 | 500 | 216 | 2.66 | 9.78 | 7.89 | 1.99 | 2.31 |
| -5 | (+23) | 2137 | 539 | 626 | 239 | 2.82 | 12.30 | 8.94 | 2.25 | 2.62 |
| 0 | (+32) | 2640 | 665 | 774 | 263 | 2.98 | 15.26 | 10.07 | 2.54 | 2.95 |

| TEST CONDITIONS: @115V60Hz | | ASHRAE32 Static | | | | (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] |
| -35 | (-31) | 375 | 94 | 110 | 112 | 2.12 | 2.12 | 3.39 | 0.86 | 0.99 |
| -30 | (-22) | 531 | 134 | 156 | 133 | 2.20 | 3.01 | 3.99 | 1.00 | 1.17 |
| -25 | (-13) | 726 | 183 | 213 | 156 | 2.31 | 4.13 | 4.63 | 1.17 | 1.36 |
| -20 | (- 4) | 967 | 244 | 283 | 181 | 2.44 | 5.50 | 5.32 | 1.34 | 1.56 |
| -15 | (+ 5) | 1260 | 317 | 369 | 207 | 2.61 | 7.19 | 6.05 | 1.52 | 1.77 |
| -10 | (+14) | 1611 | 406 | 472 | 235 | 2.80 | 9.23 | 6.82 | 1.72 | 2.00 |
| -5 | (+23) | 2028 | 511 | 594 | 265 | 3.00 | 11.67 | 7.63 | 1.92 | 2.24 |
| 0 | (+32) | 2517 | 634 | 738 | 297 | 3.23 | 14.55 | 8.48 | 2.14 | 2.49 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @115V60Hz | | ASHRAE32 Static | | | (Condensing temperature 65°C (+149°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] |
| -35 | (-31) | 327 | 82 | 96 | 109 | 2.11 | 1.85 | 2.96 | 0.75 | 0.87 |
| -30 | (-22) | 473 | 119 | 139 | 134 | 2.20 | 2.68 | 3.53 | 0.89 | 1.03 |
| -25 | (-13) | 657 | 165 | 192 | 160 | 2.33 | 3.73 | 4.11 | 1.04 | 1.21 |
| -20 | (- 4) | 884 | 223 | 259 | 189 | 2.50 | 5.03 | 4.70 | 1.19 | 1.38 |
| -15 | (+ 5) | 1162 | 293 | 341 | 221 | 2.70 | 6.63 | 5.30 | 1.34 | 1.55 |
| -10 | (+14) | 1498 | 378 | 439 | 255 | 2.94 | 8.58 | 5.90 | 1.49 | 1.73 |
| -5 | (+23) | 1898 | 478 | 556 | 292 | 3.20 | 10.92 | 6.50 | 1.64 | 1.90 |
| 0 | (+32) | 2368 | 597 | 694 | 332 | 3.50 | 13.69 | 7.10 | 1.79 | 2.08 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-------------------------------|------|--------------------------|
| 1 Base plate | Universal EG/F/AMEM version 2 | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 8.2 +0.12/-0.08 | [mm] | (0.323" +0.005"/-0.003") |
| 3.1.1 Material | Copper | | |
| 3.1.2 Shape | Straight | | |
| 3.2 DISCHARGE | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.2.1 Material | Copper | | |
| 3.2.2 Shape | Straight | | |
| 3.3 PROCESS | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.3.1 Material | Copper | | |
| 3.3.2 Shape | Straight | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |