

COMPRESSOR DEFINITION

| | |
|---------------------------|-----------------|
| Designation | F F112HBKW |
| Nominal Voltage/Frequency | 220-240 V 50 Hz |
| Engineering Number | 513200994 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|-----------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-134a | | |
| 3 Nominal voltage and frequency | 220-240 / 50 | [V / Hz] | |
| 4 Application type | Low-Medium-High Back Pressure | | |
| 4.1 Evaporating temperature range | -35°C to 15°C | (-31°F to 59°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) | Fan | 198 to 255 V | - |
| 8.2 LBP (43°C Ambient temperature) | Fan | 198 to 255 V | - |
| 8.3 HBP (32°C Ambient temperature) | Fan | 198 to 255 V | - |
| 8.4 HBP (43°C Ambient temperature) | Fan | 198 to 255 V | - |
| 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 | 1/3+ | [hp] |
| 2 Displacement | 11.14 | [cm ³] (0.680 cu.in) |
| 2.1 Bore [mm] | 26.000 | |
| 2.2 Stroke [mm] | 21.000 | |
| 3 Lubricant charge | 280 | [ml] (9.47 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 | |
| 4 Weight (with oil charge) | 11.47 | [kg] (25.29 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 | 220-240 V 50 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Current Relay | |
| 2.1 Starting device | 213516035/213516043 | |
| 3 Start capacitor | 88-108(220) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | MRP40APN-5590 | |
| 6 Start winding resistance | 29.90 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 5.70 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50 Hz) | 20.00 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz) | 2.50 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz) | 3.00 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CCC - IRAM - UL - VDE | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | |
|-------------------------------|----------|------|--------------------------------|----------------------------------|--|---------------------------|--------------------------------------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAEHBP32 Fan | | Evaporating temperature (Condensing temperature | | 7.2°C (44.96°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] |
| 4492 | 1132 | 1316 | 504 | 2.79 | | 8.91 | 2.25 | 2.61 |

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| 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] |
| 1090 | 275 | 319 | 256 | 1.96 | 6.19 | 4.26 | 1.07 | 1.25 |

E - PERFORMANCE - CURVES

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|-----------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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] |
| -35 (-31) | 553 | 139 | 162 | 187 | 1.87 | 3.13 | 2.94 | 0.74 | 0.86 |
| -30 (-22) | 762 | 192 | 223 | 214 | 1.91 | 4.33 | 3.62 | 0.91 | 1.06 |
| -25 (-13) | 1038 | 262 | 304 | 242 | 1.97 | 5.90 | 4.35 | 1.10 | 1.27 |
| -20 (- 4) | 1383 | 348 | 405 | 272 | 2.05 | 7.87 | 5.12 | 1.29 | 1.50 |
| -15 (+ 5) | 1799 | 453 | 527 | 303 | 2.13 | 10.26 | 5.94 | 1.50 | 1.74 |
| -10 (+14) | 2289 | 577 | 671 | 336 | 2.23 | 13.10 | 6.80 | 1.71 | 1.99 |
| -5 (+23) | 2853 | 719 | 836 | 370 | 2.35 | 16.41 | 7.69 | 1.94 | 2.25 |
| 0 (+32) | 3495 | 881 | 1024 | 406 | 2.47 | 20.21 | 8.60 | 2.17 | 2.52 |
| +5 (+41) | 4217 | 1063 | 1236 | 442 | 2.60 | 24.54 | 9.52 | 2.40 | 2.79 |
| +10 (+50) | 5019 | 1265 | 1471 | 480 | 2.75 | 29.41 | 10.46 | 2.64 | 3.07 |
| +15 (+59) | 5905 | 1488 | 1730 | 518 | 2.90 | 34.86 | 11.40 | 2.87 | 3.34 |

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|-----------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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] |
| -35 (-31) | 514 | 130 | 151 | 184 | 1.89 | 2.91 | 2.71 | 0.68 | 0.79 |
| -30 (-22) | 713 | 180 | 209 | 215 | 1.93 | 4.05 | 3.31 | 0.83 | 0.97 |
| -25 (-13) | 974 | 245 | 285 | 247 | 2.00 | 5.54 | 3.95 | 1.00 | 1.16 |
| -20 (- 4) | 1300 | 328 | 381 | 282 | 2.08 | 7.40 | 4.62 | 1.16 | 1.35 |
| -15 (+ 5) | 1693 | 427 | 496 | 319 | 2.18 | 9.65 | 5.32 | 1.34 | 1.56 |
| -10 (+14) | 2155 | 543 | 631 | 357 | 2.30 | 12.33 | 6.03 | 1.52 | 1.77 |
| -5 (+23) | 2687 | 677 | 787 | 398 | 2.44 | 15.44 | 6.76 | 1.70 | 1.98 |
| 0 (+32) | 3292 | 830 | 965 | 440 | 2.59 | 19.03 | 7.50 | 1.89 | 2.20 |
| +5 (+41) | 3972 | 1001 | 1164 | 483 | 2.75 | 23.11 | 8.23 | 2.08 | 2.41 |
| +10 (+50) | 4729 | 1192 | 1386 | 528 | 2.93 | 27.71 | 8.97 | 2.26 | 2.63 |
| +15 (+59) | 5565 | 1402 | 1631 | 575 | 3.12 | 32.85 | 9.69 | 2.44 | 2.84 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Fan | | | (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) | 395 | 100 | 116 | 175 | 1.87 | 2.22 | 2.32 | 0.58 | 0.68 |
| -30 | (-22) | 608 | 153 | 178 | 211 | 1.92 | 3.46 | 2.91 | 0.73 | 0.85 |
| -25 | (-13) | 880 | 222 | 258 | 249 | 2.00 | 5.01 | 3.53 | 0.89 | 1.03 |
| -20 | (- 4) | 1212 | 305 | 355 | 289 | 2.10 | 6.90 | 4.16 | 1.05 | 1.22 |
| -15 | (+ 5) | 1606 | 405 | 471 | 332 | 2.22 | 9.16 | 4.81 | 1.21 | 1.41 |
| -10 | (+14) | 2065 | 520 | 605 | 377 | 2.37 | 11.82 | 5.45 | 1.37 | 1.60 |
| -5 | (+23) | 2590 | 653 | 759 | 424 | 2.53 | 14.89 | 6.09 | 1.54 | 1.79 |
| 0 | (+32) | 3183 | 802 | 933 | 474 | 2.71 | 18.40 | 6.73 | 1.70 | 1.97 |
| +5 | (+41) | 3847 | 970 | 1127 | 525 | 2.91 | 22.38 | 7.34 | 1.85 | 2.15 |
| +10 | (+50) | 4583 | 1155 | 1343 | 578 | 3.13 | 26.85 | 7.94 | 2.00 | 2.33 |
| +15 | (+59) | 5394 | 1359 | 1581 | 633 | 3.36 | 31.84 | 8.51 | 2.14 | 2.49 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|---------------------|------|--------------------------|
| 1 Base plate | Universal | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.1.1 Material | Copper plated steel | | |
| 3.1.2 Shape | Straight | | |
| 3.2 DISCHARGE | 5 +0.18/-0.06 | [mm] | (0.197" +0.007"/-0.002") |
| 3.2.1 Material | Copper plated steel | | |
| 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 plated steel | | |
| 3.3.2 Shape | Straight | | |
| 3.4 Oil cooler (Copper) | 5.1 +0.10/+0.00 | [mm] | (0.201" +0.004"/+0.000") |
| 3.5 Connector sealing | Rubber Plugs | | |