

COMPRESSOR DEFINITION

| | |
|---------------------------|-------------|
| Designation | F F112HBX |
| Nominal Voltage/Frequency | 220 V 60 Hz |
| Engineering Number | 513200353 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-134a | | |
| 3 Nominal voltage and frequency | 220 / 60 | [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 | CSIR | | |
| 6 Starting torque | HST - High 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) | Fan | - | 198 to 242 V |
| 8.2 LBP (43°C Ambient temperature) | Fan | - | 198 to 242 V |
| 8.3 HBP (32°C Ambient temperature) | Fan | - | 198 to 242 V |
| 8.4 HBP (43°C Ambient temperature) | Fan | - | 198 to 242 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) | 11.25 | [kg] (24.80 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 V 60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Current Relay | |
| 2.1 Starting device | 213516485 | |
| 3 Start capacitor | 64-77(250)/124-149(180) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | B143-110 | |
| 6 Start winding resistance | 14.55 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 4.69 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 26.50 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | 3.70 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | 4.50 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CE - TUV - UKCA - UL | |

D - PERFORMANCE - CHECK POINT DATA

| TEST CONDITIONS: @220V60Hz | | | 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] |
| 5300 | 1336 | 1553 | 682 | 3.68 | | 7.77 | 1.96 | 2.28 |

| TEST CONDITIONS: @220V60Hz | | | 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] |
| 1190 | 300 | 349 | 296 | 2.72 | 6.76 | 4.02 | 1.01 | 1.18 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V60Hz | | 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) | 665 | 168 | 195 | 208 | 2.61 | 3.76 | 3.13 | 0.79 | 0.92 |
| -30 | (-22) | 878 | 221 | 257 | 239 | 2.63 | 4.99 | 3.72 | 0.94 | 1.09 |
| -25 | (-13) | 1168 | 294 | 342 | 273 | 2.67 | 6.64 | 4.35 | 1.10 | 1.28 |
| -20 | (- 4) | 1541 | 388 | 452 | 310 | 2.73 | 8.77 | 5.04 | 1.27 | 1.48 |
| -15 | (+ 5) | 2001 | 504 | 586 | 349 | 2.81 | 11.41 | 5.75 | 1.45 | 1.69 |
| -10 | (+14) | 2553 | 643 | 748 | 392 | 2.91 | 14.61 | 6.50 | 1.64 | 1.90 |
| -5 | (+23) | 3201 | 807 | 938 | 439 | 3.04 | 18.41 | 7.26 | 1.83 | 2.13 |
| 0 | (+32) | 3952 | 996 | 1158 | 490 | 3.20 | 22.85 | 8.03 | 2.02 | 2.35 |
| +5 | (+41) | 4808 | 1212 | 1409 | 545 | 3.38 | 27.98 | 8.80 | 2.22 | 2.58 |
| +10 | (+50) | 5776 | 1456 | 1692 | 604 | 3.60 | 33.85 | 9.56 | 2.41 | 2.80 |
| +15 | (+59) | 6860 | 1729 | 2010 | 668 | 3.84 | 40.49 | 10.30 | 2.59 | 3.02 |

| TEST CONDITIONS: @220V60Hz | | 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) | 525 | 132 | 154 | 206 | 2.64 | 2.96 | 2.52 | 0.64 | 0.74 |
| -30 | (-22) | 753 | 190 | 221 | 243 | 2.66 | 4.28 | 3.12 | 0.79 | 0.91 |
| -25 | (-13) | 1053 | 265 | 308 | 282 | 2.70 | 5.99 | 3.76 | 0.95 | 1.10 |
| -20 | (- 4) | 1430 | 360 | 419 | 323 | 2.76 | 8.14 | 4.44 | 1.12 | 1.30 |
| -15 | (+ 5) | 1890 | 476 | 554 | 367 | 2.85 | 10.78 | 5.15 | 1.30 | 1.51 |
| -10 | (+14) | 2436 | 614 | 714 | 414 | 2.96 | 13.94 | 5.89 | 1.48 | 1.72 |
| -5 | (+23) | 3074 | 775 | 901 | 463 | 3.11 | 17.67 | 6.63 | 1.67 | 1.94 |
| 0 | (+32) | 3809 | 960 | 1116 | 516 | 3.27 | 22.02 | 7.37 | 1.86 | 2.16 |
| +5 | (+41) | 4645 | 1171 | 1361 | 572 | 3.47 | 27.03 | 8.11 | 2.04 | 2.38 |
| +10 | (+50) | 5588 | 1408 | 1637 | 632 | 3.70 | 32.74 | 8.84 | 2.23 | 2.59 |
| +15 | (+59) | 6641 | 1674 | 1946 | 696 | 3.96 | 39.20 | 9.54 | 2.40 | 2.79 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V60Hz | | 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 | 177 | 2.59 | 2.23 | 2.24 | 0.57 | 0.66 |
| -30 | (-22) | 630 | 159 | 185 | 226 | 2.62 | 3.59 | 2.78 | 0.70 | 0.81 |
| -25 | (-13) | 933 | 235 | 273 | 276 | 2.68 | 5.31 | 3.36 | 0.85 | 0.98 |
| -20 | (- 4) | 1308 | 330 | 383 | 328 | 2.77 | 7.45 | 3.96 | 1.00 | 1.16 |
| -15 | (+ 5) | 1760 | 444 | 516 | 382 | 2.88 | 10.04 | 4.60 | 1.16 | 1.35 |
| -10 | (+14) | 2295 | 578 | 672 | 438 | 3.01 | 13.13 | 5.24 | 1.32 | 1.54 |
| -5 | (+23) | 2915 | 735 | 854 | 496 | 3.18 | 16.76 | 5.89 | 1.49 | 1.73 |
| 0 | (+32) | 3628 | 914 | 1063 | 557 | 3.38 | 20.97 | 6.54 | 1.65 | 1.92 |
| +5 | (+41) | 4437 | 1118 | 1300 | 621 | 3.61 | 25.81 | 7.18 | 1.81 | 2.10 |
| +10 | (+50) | 5347 | 1347 | 1567 | 688 | 3.87 | 31.33 | 7.79 | 1.96 | 2.28 |
| +15 | (+59) | 6363 | 1603 | 1865 | 758 | 4.16 | 37.56 | 8.37 | 2.11 | 2.45 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-----------------|------|--------------------------|
| 1 Base plate | Universal EG/F | | |
| 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 | | |