

COMPRESSOR DEFINITION

| | |
|---------------------------|---------------------------|
| Designation | F GS80HA |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number | 513200065 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|--|-----------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-134a | | |
| 3 Nominal voltage and frequency | 220-240 / 50-60 | [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 255 V | 198 to 242 V |
| 8.2 LBP (43°C Ambient temperature) | Static | 198 to 255 V | 198 to 242 V |
| 8.3 HBP (32°C Ambient temperature) | - | - | - |
| 8.4 HBP (43°C Ambient temperature) | - | - | - |
| 9 Maximum condensing pressures/temperature | | | |
| 9.1 Operating (gauge) | 16.2 | [kgf/cm ²] (230 psig) | / °C - °F |
| 9.2 Peak (gauge) | 20.6 | [kgf/cm ²] (293 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|---------------|--|
| 1 Commercial designation | 1/4 | [hp] |
| 2 Displacement | 7.15 | [cm ³] (0.436 cu.in) |
| 2.1 Bore [mm] | 22.500 | |
| 2.2 Stroke [mm] | 18.000 | |
| 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) | 11.35 | [kg] (25.02 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 50-60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | PTC | |
| 2.1 Starting device | 7M220MD3/8EA17C3/8EA5B3 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 5(350) | [µF(VAC minimum)] |
| 5 Motor protection | 4TM189RHBYY-53 | |
| 6 Start winding resistance | 15.00 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 10.50 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50/60 Hz) | 7.50/6.00 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz) | 1.10/1.00 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50/60 Hz) | - | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CCC - IRAM - UL - VDE | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS: @220V50Hz | | | 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] |
| 695 | 175 | 204 | 136 | 0.68 | 3.95 | 5.11 | 1.29 | 1.50 |

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS: @220V60Hz | | | 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] |
| 825 | 208 | 242 | 160 | 0.73 | 4.69 | 5.16 | 1.30 | 1.51 |

E - PERFORMANCE - CURVES

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | 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) | 374 | 94 | 110 | 94 | 0.49 | 2.12 | 3.97 | 1.00 | 1.16 |
| -30 (-22) | 551 | 139 | 162 | 111 | 0.56 | 3.12 | 4.95 | 1.25 | 1.45 |
| -25 (-13) | 733 | 185 | 215 | 127 | 0.64 | 4.16 | 5.77 | 1.45 | 1.69 |
| -20 (- 4) | 938 | 236 | 275 | 144 | 0.72 | 5.34 | 6.51 | 1.64 | 1.91 |
| -15 (+ 5) | 1187 | 299 | 348 | 162 | 0.81 | 6.78 | 7.31 | 1.84 | 2.14 |
| -10 (+14) | 1501 | 378 | 440 | 180 | 0.90 | 8.60 | 8.28 | 2.09 | 2.43 |

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | 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) | 313 | 79 | 92 | 92 | 0.48 | 1.77 | 3.40 | 0.86 | 1.00 |
| -30 (-22) | 494 | 124 | 145 | 111 | 0.57 | 2.80 | 4.39 | 1.11 | 1.29 |
| -25 (-13) | 674 | 170 | 197 | 131 | 0.65 | 3.82 | 5.16 | 1.30 | 1.51 |
| -20 (- 4) | 873 | 220 | 256 | 151 | 0.74 | 4.97 | 5.82 | 1.47 | 1.70 |
| -15 (+ 5) | 1111 | 280 | 325 | 172 | 0.83 | 6.34 | 6.48 | 1.63 | 1.90 |
| -10 (+14) | 1408 | 355 | 413 | 193 | 0.93 | 8.07 | 7.25 | 1.83 | 2.13 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V50Hz | | 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) | 229 | 58 | 67 | 84 | 0.45 | 1.30 | 2.75 | 0.69 | 0.80 | |
| -30 (-22) | 415 | 105 | 122 | 107 | 0.55 | 2.36 | 3.78 | 0.95 | 1.11 | |
| -25 (-13) | 596 | 150 | 175 | 131 | 0.66 | 3.38 | 4.54 | 1.14 | 1.33 | |
| -20 (- 4) | 790 | 199 | 232 | 155 | 0.76 | 4.50 | 5.14 | 1.29 | 1.51 | |
| -15 (+ 5) | 1019 | 257 | 299 | 180 | 0.87 | 5.82 | 5.69 | 1.43 | 1.67 | |
| -10 (+14) | 1302 | 328 | 381 | 205 | 0.98 | 7.46 | 6.32 | 1.59 | 1.85 | |

| TEST CONDITIONS: @220V60Hz | | 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) | 436 | 110 | 128 | 107 | 0.50 | 2.47 | 4.09 | 1.03 | 1.20 | |
| -30 (-22) | 647 | 163 | 189 | 130 | 0.61 | 3.67 | 4.91 | 1.24 | 1.44 | |
| -25 (-13) | 879 | 221 | 257 | 154 | 0.72 | 4.99 | 5.69 | 1.43 | 1.67 | |
| -20 (- 4) | 1144 | 288 | 335 | 177 | 0.83 | 6.51 | 6.45 | 1.63 | 1.89 | |
| -15 (+ 5) | 1454 | 366 | 426 | 202 | 0.94 | 8.30 | 7.21 | 1.82 | 2.11 | |
| -10 (+14) | 1819 | 458 | 533 | 227 | 1.05 | 10.42 | 8.01 | 2.02 | 2.35 | |

| TEST CONDITIONS: @220V60Hz | | 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) | 376 | 95 | 110 | 106 | 0.49 | 2.13 | 3.54 | 0.89 | 1.04 | |
| -30 (-22) | 555 | 140 | 163 | 129 | 0.60 | 3.15 | 4.28 | 1.08 | 1.25 | |
| -25 (-13) | 763 | 192 | 224 | 154 | 0.71 | 4.33 | 4.96 | 1.25 | 1.45 | |
| -20 (- 4) | 1011 | 255 | 296 | 180 | 0.84 | 5.75 | 5.63 | 1.42 | 1.65 | |
| -15 (+ 5) | 1312 | 331 | 384 | 209 | 0.97 | 7.49 | 6.30 | 1.59 | 1.85 | |
| -10 (+14) | 1675 | 422 | 491 | 239 | 1.10 | 9.60 | 7.00 | 1.77 | 2.05 | |

| TEST CONDITIONS: @220V60Hz | | 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) | 297 | 75 | 87 | 99 | 0.46 | 1.68 | 2.99 | 0.75 | 0.88 | |
| -30 (-22) | 454 | 114 | 133 | 123 | 0.57 | 2.57 | 3.68 | 0.93 | 1.08 | |
| -25 (-13) | 647 | 163 | 190 | 150 | 0.70 | 3.68 | 4.32 | 1.09 | 1.27 | |
| -20 (- 4) | 889 | 224 | 260 | 180 | 0.84 | 5.06 | 4.94 | 1.25 | 1.45 | |
| -15 (+ 5) | 1190 | 300 | 349 | 214 | 0.99 | 6.79 | 5.57 | 1.40 | 1.63 | |
| -10 (+14) | 1561 | 393 | 457 | 250 | 1.15 | 8.94 | 6.22 | 1.57 | 1.82 | |

F - EXTERNAL CHARACTERISTICS

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