

COMPRESSOR DEFINITION

| | |
|---------------------------|--------------------|
| Designation | EG ZS90HLC |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number | 513701075 |

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 255 V |
| 8.2 LBP (43°C Ambient temperature) | Static | 198 to 255 V | 198 to 255 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 | 7.15 | [cm ³] (0.436 cu.in) |
| 2.1 Bore [mm] | 22.500 | |
| 2.2 Stroke [mm] | 18.000 | |
| 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) | 11.29 | [kg] (24.89 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 | 8EA17C3/QPS2-A22MD3/QPS2-A22MD3 091 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 4(330)/5(330) | [µF(VAC minimum)] |
| 5 Motor protection | 4TM283NFBYY-53 | |
| 6 Start winding resistance | 21.70 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 10.40 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50/60 Hz) | 10.00/9.30 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz) | 1.40/1.30 | [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 | CE - IRAM - TUV - UKCA - 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] |
| 767 | 193 | 225 | 133 | 0.71 | 4.36 | 5.77 | 1.45 | 1.69 |

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| 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] |
| 950 | 239 | 278 | 157 | 0.72 | 5.40 | 6.04 | 1.52 | 1.77 |

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) | 405 | 102 | 119 | 85 | 0.48 | 2.29 | 4.72 | 1.19 | 1.38 |
| -30 (-22) | 572 | 144 | 167 | 102 | 0.56 | 3.24 | 5.60 | 1.41 | 1.64 |
| -25 (-13) | 758 | 191 | 222 | 119 | 0.65 | 4.30 | 6.37 | 1.61 | 1.87 |
| -20 (- 4) | 977 | 246 | 286 | 137 | 0.75 | 5.56 | 7.15 | 1.80 | 2.09 |
| -15 (+ 5) | 1245 | 314 | 365 | 155 | 0.85 | 7.10 | 8.01 | 2.02 | 2.35 |
| -10 (+14) | 1574 | 397 | 461 | 173 | 0.94 | 9.02 | 9.06 | 2.28 | 2.65 |

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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) | 334 | 84 | 98 | 82 | 0.46 | 1.89 | 4.10 | 1.03 | 1.20 |
| -30 (-22) | 507 | 128 | 149 | 101 | 0.56 | 2.88 | 4.98 | 1.25 | 1.46 |
| -25 (-13) | 696 | 176 | 204 | 122 | 0.66 | 3.95 | 5.69 | 1.44 | 1.67 |
| -20 (- 4) | 915 | 231 | 268 | 144 | 0.78 | 5.21 | 6.35 | 1.60 | 1.86 |
| -15 (+ 5) | 1178 | 297 | 345 | 167 | 0.90 | 6.73 | 7.05 | 1.78 | 2.06 |
| -10 (+14) | 1500 | 378 | 439 | 190 | 1.02 | 8.59 | 7.87 | 1.98 | 2.31 |

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) | 256 | 64 | 75 | 73 | 0.42 | 1.45 | 3.51 | 0.88 | 1.03 | |
| -30 (-22) | 432 | 109 | 127 | 96 | 0.53 | 2.45 | 4.40 | 1.11 | 1.29 | |
| -25 (-13) | 620 | 156 | 182 | 121 | 0.66 | 3.52 | 5.09 | 1.28 | 1.49 | |
| -20 (- 4) | 834 | 210 | 244 | 148 | 0.80 | 4.74 | 5.66 | 1.43 | 1.66 | |
| -15 (+ 5) | 1088 | 274 | 319 | 175 | 0.95 | 6.21 | 6.22 | 1.57 | 1.82 | |
| -10 (+14) | 1397 | 352 | 409 | 204 | 1.10 | 8.00 | 6.85 | 1.73 | 2.01 | |

| 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) | 499 | 126 | 146 | 102 | 0.49 | 2.82 | 4.86 | 1.22 | 1.42 | |
| -30 (-22) | 704 | 177 | 206 | 122 | 0.57 | 3.99 | 5.77 | 1.45 | 1.69 | |
| -25 (-13) | 934 | 235 | 274 | 143 | 0.66 | 5.30 | 6.57 | 1.66 | 1.93 | |
| -20 (- 4) | 1205 | 304 | 353 | 164 | 0.76 | 6.86 | 7.37 | 1.86 | 2.16 | |
| -15 (+ 5) | 1535 | 387 | 450 | 186 | 0.86 | 8.77 | 8.26 | 2.08 | 2.42 | |
| -10 (+14) | 1942 | 489 | 569 | 207 | 0.95 | 11.13 | 9.34 | 2.35 | 2.74 | |

| 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) | 412 | 104 | 121 | 98 | 0.47 | 2.33 | 4.24 | 1.07 | 1.24 | |
| -30 (-22) | 626 | 158 | 183 | 121 | 0.57 | 3.55 | 5.14 | 1.29 | 1.50 | |
| -25 (-13) | 859 | 217 | 252 | 146 | 0.68 | 4.88 | 5.88 | 1.48 | 1.72 | |
| -20 (- 4) | 1130 | 285 | 331 | 173 | 0.80 | 6.43 | 6.56 | 1.65 | 1.92 | |
| -15 (+ 5) | 1454 | 366 | 426 | 200 | 0.92 | 8.30 | 7.27 | 1.83 | 2.13 | |
| -10 (+14) | 1851 | 466 | 542 | 227 | 1.04 | 10.60 | 8.12 | 2.05 | 2.38 | |

| 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) | 316 | 80 | 92 | 87 | 0.42 | 1.78 | 3.62 | 0.91 | 1.06 | |
| -30 (-22) | 533 | 134 | 156 | 115 | 0.54 | 3.02 | 4.54 | 1.14 | 1.33 | |
| -25 (-13) | 765 | 193 | 224 | 145 | 0.67 | 4.34 | 5.25 | 1.32 | 1.54 | |
| -20 (- 4) | 1029 | 259 | 302 | 177 | 0.81 | 5.86 | 5.84 | 1.47 | 1.71 | |
| -15 (+ 5) | 1343 | 339 | 394 | 210 | 0.96 | 7.67 | 6.42 | 1.62 | 1.88 | |
| -10 (+14) | 1724 | 435 | 505 | 243 | 1.12 | 9.88 | 7.07 | 1.78 | 2.07 | |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-------------------------------|------|--------------------------|
| 1 Base plate | Universal EG/F/AMEM version 2 | | |
| 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 | 4.94 +0.08/-0.08 | [mm] | (0.194" +0.003"/-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 | | |