

COMPRESSOR DEFINITION

| | |
|---------------------------|----------------|
| Designation | EM I60HER |
| Nominal Voltage/Frequency | 220 V 50-60 Hz |
| Engineering Number | 513307203 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-134a | | |
| 3 Nominal voltage and frequency | 220 / 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 | 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/Fan | 187 to 242 V | 187 to 242 V |
| 8.2 LBP (43°C Ambient temperature) | Static/Fan | 187 to 242 V | 187 to 242 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 | 1/6 | [hp] |
| 2 Displacement | 4.99 | [cm ³] (0.305 cu.in) |
| 2.1 Bore [mm] | 21.000 | |
| 2.2 Stroke [mm] | 14.400 | |
| 3 Lubricant charge | 170 | [ml] (5.75 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 | |
| 4 Weight (with oil charge) | 7.74 | [kg] (17.06 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 50-60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Current Relay | |
| 2.1 Starting device | 213514130/213515004 | |
| 3 Start capacitor | 72-88(210) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | 4TM734LFBYY-53 | |
| 6 Start winding resistance | 27.80 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 13.70 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50/60 Hz) | 12.50/11.50 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz) | 1.35/1.15 | [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 | IRAM - TUV | |

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] |
| 470 | 118 | 138 | 121 | 1.05 | 2.67 | 3.88 | 0.98 | 1.14 |

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
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| 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] |
| 570 | 144 | 167 | 133 | 0.93 | 3.24 | 4.28 | 1.08 | 1.25 |

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) | 249 | 63 | 73 | 92 | 1.00 | 1.41 | 2.72 | 0.69 | 0.80 |
| -30 (-22) | 346 | 87 | 101 | 102 | 1.03 | 1.96 | 3.39 | 0.85 | 0.99 |
| -25 (-13) | 468 | 118 | 137 | 112 | 1.04 | 2.65 | 4.18 | 1.05 | 1.22 |
| -20 (- 4) | 616 | 155 | 180 | 123 | 1.06 | 3.50 | 5.02 | 1.26 | 1.47 |
| -15 (+ 5) | 792 | 200 | 232 | 135 | 1.08 | 4.52 | 5.86 | 1.48 | 1.72 |
| -10 (+14) | 997 | 251 | 292 | 150 | 1.10 | 5.71 | 6.63 | 1.67 | 1.94 |

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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) | 213 | 54 | 62 | 91 | 1.00 | 1.20 | 2.33 | 0.59 | 0.68 |
| -30 (-22) | 302 | 76 | 89 | 103 | 1.03 | 1.71 | 2.95 | 0.74 | 0.86 |
| -25 (-13) | 418 | 105 | 123 | 114 | 1.05 | 2.37 | 3.68 | 0.93 | 1.08 |
| -20 (- 4) | 562 | 142 | 165 | 126 | 1.07 | 3.20 | 4.46 | 1.12 | 1.31 |
| -15 (+ 5) | 734 | 185 | 215 | 140 | 1.09 | 4.19 | 5.24 | 1.32 | 1.53 |
| -10 (+14) | 936 | 236 | 274 | 158 | 1.12 | 5.36 | 5.94 | 1.50 | 1.74 |

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) | 176 | 44 | 52 | 87 | 1.00 | 1.00 | 2.02 | 0.51 | 0.59 | |
| -30 (-22) | 258 | 65 | 75 | 100 | 1.03 | 1.46 | 2.58 | 0.65 | 0.75 | |
| -25 (-13) | 366 | 92 | 107 | 113 | 1.06 | 2.08 | 3.24 | 0.82 | 0.95 | |
| -20 (- 4) | 504 | 127 | 148 | 128 | 1.08 | 2.87 | 3.94 | 0.99 | 1.16 | |
| -15 (+ 5) | 671 | 169 | 197 | 145 | 1.10 | 3.83 | 4.63 | 1.17 | 1.36 | |
| -10 (+14) | 870 | 219 | 255 | 166 | 1.14 | 4.98 | 5.24 | 1.32 | 1.54 | |

| 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) | 303 | 76 | 89 | 95 | 0.82 | 1.71 | 3.19 | 0.80 | 0.93 | |
| -30 (-22) | 423 | 106 | 124 | 111 | 0.86 | 2.39 | 3.85 | 0.97 | 1.13 | |
| -25 (-13) | 576 | 145 | 169 | 125 | 0.90 | 3.27 | 4.62 | 1.16 | 1.35 | |
| -20 (- 4) | 762 | 192 | 223 | 140 | 0.94 | 4.34 | 5.45 | 1.37 | 1.60 | |
| -15 (+ 5) | 979 | 247 | 287 | 156 | 0.99 | 5.59 | 6.28 | 1.58 | 1.84 | |
| -10 (+14) | 1227 | 309 | 359 | 173 | 1.05 | 7.03 | 7.06 | 1.78 | 2.07 | |

| 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) | 238 | 60 | 70 | 93 | 0.82 | 1.35 | 2.55 | 0.64 | 0.75 | |
| -30 (-22) | 356 | 90 | 104 | 111 | 0.87 | 2.02 | 3.20 | 0.81 | 0.94 | |
| -25 (-13) | 507 | 128 | 149 | 128 | 0.91 | 2.88 | 3.93 | 0.99 | 1.15 | |
| -20 (- 4) | 689 | 174 | 202 | 146 | 0.96 | 3.92 | 4.71 | 1.19 | 1.38 | |
| -15 (+ 5) | 902 | 227 | 264 | 165 | 1.02 | 5.15 | 5.47 | 1.38 | 1.60 | |
| -10 (+14) | 1144 | 288 | 335 | 186 | 1.10 | 6.55 | 6.17 | 1.55 | 1.81 | |

| 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) | 199 | 50 | 58 | 88 | 0.83 | 1.12 | 2.27 | 0.57 | 0.67 | |
| -30 (-22) | 310 | 78 | 91 | 108 | 0.87 | 1.76 | 2.86 | 0.72 | 0.84 | |
| -25 (-13) | 453 | 114 | 133 | 128 | 0.91 | 2.57 | 3.53 | 0.89 | 1.03 | |
| -20 (- 4) | 627 | 158 | 184 | 149 | 0.96 | 3.57 | 4.22 | 1.06 | 1.24 | |
| -15 (+ 5) | 830 | 209 | 243 | 171 | 1.03 | 4.73 | 4.87 | 1.23 | 1.43 | |
| -10 (+14) | 1061 | 267 | 311 | 195 | 1.13 | 6.08 | 5.45 | 1.37 | 1.60 | |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|---------------------------------------|------|--------------------------|
| 1 Base plate | European Standard 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 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 | Slanted | | |
| 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) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |