

COMPRESSOR DEFINITION

| | |
|---------------------------|------------------------|
| Designation | EM IS70HHR |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number | 513305029 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|--|-----------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-134a | | |
| 3 Nominal voltage and frequency | 115-127 / 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 | 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 | - | 103 to 140 V |
| 8.2 LBP (43°C Ambient temperature) | Fan | - | 103 to 140 V |
| 8.3 HBP (32°C Ambient temperature) | Fan | - | 103 to 140 V |
| 8.4 HBP (43°C Ambient temperature) | Fan | - | 103 to 140 V |
| 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 | 1/5 | [hp] |
| 2 Displacement | 5.96 | [cm ³] (0.364 cu.in) |
| 2.1 Bore [mm] | 22.500 | |
| 2.2 Stroke [mm] | 15.000 | |
| 3 Lubricant charge | 160 | [ml] (5.41 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 | |
| 4 Weight (with oil charge) | 7.26 | [kg] (16.01 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 | 115-127 V 60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Current Relay | |
| 2.1 Starting device | 213514067/213515250 | |
| 3 Start capacitor | 270-324(150) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | 5TM762PFBZZ-53 | |
| 6 Start winding resistance | 8.20 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 3.00 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 28.20 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | 3.44 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | 3.92 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | UL | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|--|---------------------------|--------------------------------------|-------|--|
| TEST CONDITIONS: @115V60Hz | | | 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] | |
| 2870 | 723 | 841 | 304 | 3.33 | | 9.44 | 2.38 | 2.77 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|--|---------------------------|--|-------|--|
| TEST CONDITIONS: @115V60Hz | | | 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] | |
| 693 | 175 | 203 | 151 | 2.36 | 3.94 | 4.58 | 1.15 | 1.34 | |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|----------------------------|----------|-----------------|-----------------------------|---------------------------------------|-------------------------|---------------------------|-----------|-------|--|
| TEST CONDITIONS: @115V60Hz | | | ASHRAE32 Fan | | (Condensing temperature 35°C (+95°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) | 407 | 103 | 119 | 102 | 2.19 | 2.30 | 3.97 | 1.00 | 1.16 | |
| -30 (-22) | 553 | 139 | 162 | 116 | 2.23 | 3.15 | 4.75 | 1.20 | 1.39 | |
| -25 (-13) | 730 | 184 | 214 | 131 | 2.28 | 4.15 | 5.60 | 1.41 | 1.64 | |
| -20 (- 4) | 945 | 238 | 277 | 145 | 2.34 | 5.38 | 6.51 | 1.64 | 1.91 | |
| -15 (+ 5) | 1205 | 304 | 353 | 161 | 2.41 | 6.87 | 7.48 | 1.88 | 2.19 | |
| -10 (+14) | 1518 | 383 | 445 | 178 | 2.50 | 8.69 | 8.50 | 2.14 | 2.49 | |
| -5 (+23) | 1890 | 476 | 554 | 196 | 2.61 | 10.87 | 9.59 | 2.42 | 2.81 | |
| 0 (+32) | 2330 | 587 | 683 | 216 | 2.74 | 13.47 | 10.72 | 2.70 | 3.14 | |
| +5 (+41) | 2844 | 717 | 833 | 238 | 2.90 | 16.56 | 11.90 | 3.00 | 3.49 | |
| +10 (+50) | 3440 | 867 | 1008 | 262 | 3.08 | 20.16 | 13.14 | 3.31 | 3.85 | |
| +15 (+59) | 4124 | 1039 | 1208 | 288 | 3.30 | 24.34 | 14.42 | 3.63 | 4.22 | |

| | | | | | | | | | | |
|-------------------------------|----------------------------|----------|-----------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|--|
| TEST CONDITIONS: @115V60Hz | | | 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) | 368 | 93 | 108 | 105 | 2.21 | 2.08 | 3.56 | 0.90 | 1.04 | |
| -30 (-22) | 512 | 129 | 150 | 121 | 2.25 | 2.91 | 4.26 | 1.07 | 1.25 | |
| -25 (-13) | 687 | 173 | 201 | 137 | 2.31 | 3.91 | 5.02 | 1.26 | 1.47 | |
| -20 (- 4) | 898 | 226 | 263 | 155 | 2.38 | 5.11 | 5.82 | 1.47 | 1.70 | |
| -15 (+ 5) | 1153 | 291 | 338 | 173 | 2.47 | 6.57 | 6.67 | 1.68 | 1.95 | |
| -10 (+14) | 1459 | 368 | 428 | 193 | 2.57 | 8.35 | 7.56 | 1.90 | 2.21 | |
| -5 (+23) | 1824 | 460 | 535 | 214 | 2.70 | 10.49 | 8.49 | 2.14 | 2.49 | |
| 0 (+32) | 2255 | 568 | 661 | 237 | 2.85 | 13.04 | 9.46 | 2.38 | 2.77 | |
| +5 (+41) | 2759 | 695 | 808 | 262 | 3.03 | 16.06 | 10.47 | 2.64 | 3.07 | |
| +10 (+50) | 3343 | 842 | 980 | 289 | 3.25 | 19.59 | 11.52 | 2.90 | 3.37 | |
| +15 (+59) | 4015 | 1012 | 1176 | 319 | 3.49 | 23.70 | 12.59 | 3.17 | 3.69 | |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: | | ASHRAE32 | | | (Condensing temperature 55°C (+131°F)) | | | | | |
|-------------------------|-------|------------------|----------|------|--|---------------------|---------------|-----------------|-----------|-------|
| @115V60Hz | | Fan | | | | | | | | |
| Evaporating temperature | | Cooling capacity | | | Power consumption | Current consumption | Gas flow rate | EFFICIENCY RATE | | |
| | | +/- 5% | | | +/- 5% | +/- 5% | +/- 5% | +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 326 | 82 | 96 | 104 | 2.21 | 1.84 | 3.16 | 0.80 | 0.92 |
| -30 | (-22) | 467 | 118 | 137 | 123 | 2.27 | 2.66 | 3.80 | 0.96 | 1.11 |
| -25 | (-13) | 636 | 160 | 186 | 142 | 2.34 | 3.62 | 4.48 | 1.13 | 1.31 |
| -20 | (- 4) | 841 | 212 | 246 | 162 | 2.43 | 4.79 | 5.20 | 1.31 | 1.52 |
| -15 | (+ 5) | 1089 | 274 | 319 | 184 | 2.53 | 6.21 | 5.95 | 1.50 | 1.74 |
| -10 | (+14) | 1386 | 349 | 406 | 207 | 2.66 | 7.93 | 6.73 | 1.70 | 1.97 |
| -5 | (+23) | 1741 | 439 | 510 | 231 | 2.81 | 10.01 | 7.54 | 1.90 | 2.21 |
| 0 | (+32) | 2161 | 545 | 633 | 258 | 2.99 | 12.49 | 8.37 | 2.11 | 2.45 |
| +5 | (+41) | 2652 | 668 | 777 | 287 | 3.20 | 15.43 | 9.23 | 2.33 | 2.70 |
| +10 | (+50) | 3222 | 812 | 944 | 318 | 3.45 | 18.89 | 10.11 | 2.55 | 2.96 |
| +15 | (+59) | 3879 | 977 | 1137 | 352 | 3.74 | 22.90 | 11.00 | 2.77 | 3.22 |

| TEST CONDITIONS: | | ASHRAE32 | | | (Condensing temperature 65°C (+149°F)) | | | | | |
|-------------------------|-------|------------------|----------|------|--|---------------------|---------------|-----------------|-----------|-------|
| @115V60Hz | | Fan | | | | | | | | |
| Evaporating temperature | | Cooling capacity | | | Power consumption | Current consumption | Gas flow rate | EFFICIENCY RATE | | |
| | | +/- 5% | | | +/- 5% | +/- 5% | +/- 5% | +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 274 | 69 | 80 | 100 | 2.17 | 1.55 | 2.67 | 0.67 | 0.78 |
| -30 | (-22) | 409 | 103 | 120 | 121 | 2.25 | 2.33 | 3.28 | 0.83 | 0.96 |
| -25 | (-13) | 571 | 144 | 167 | 144 | 2.34 | 3.25 | 3.91 | 0.99 | 1.15 |
| -20 | (- 4) | 767 | 193 | 225 | 168 | 2.45 | 4.37 | 4.56 | 1.15 | 1.34 |
| -15 | (+ 5) | 1004 | 253 | 294 | 193 | 2.58 | 5.73 | 5.24 | 1.32 | 1.53 |
| -10 | (+14) | 1291 | 325 | 378 | 220 | 2.74 | 7.38 | 5.93 | 1.49 | 1.74 |
| -5 | (+23) | 1633 | 412 | 479 | 248 | 2.93 | 9.38 | 6.63 | 1.67 | 1.94 |
| 0 | (+32) | 2039 | 514 | 597 | 279 | 3.14 | 11.78 | 7.35 | 1.85 | 2.15 |
| +5 | (+41) | 2515 | 634 | 737 | 312 | 3.39 | 14.63 | 8.08 | 2.04 | 2.37 |
| +10 | (+50) | 3069 | 773 | 899 | 348 | 3.68 | 17.99 | 8.82 | 2.22 | 2.58 |
| +15 | (+59) | 3708 | 934 | 1087 | 387 | 4.01 | 21.89 | 9.56 | 2.41 | 2.80 |

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 | 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 | | |