

COMPRESSOR DEFINITION

| | |
|---------------------------|-----------------|
| Designation | EM R70HLR |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number | 513400004 |

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 (Plus) Back Pressure | | |
| 4.1 Evaporating temperature range | -35°C to 0°C | (-31°F to 32°F) | |
| 5 Motor type | RSIR | | |
| 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) | - | - | - |
| 8.2 LBP (43°C Ambient temperature) | Static | - | 103 to 140 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 | 1/5 | [hp] |
| 2 Displacement | 5.75 | [cm ³] (0.351 cu.in) |
| 2.1 Bore [mm] | 21.000 | |
| 2.2 Stroke [mm] | 16.600 | |
| 3 Lubricant charge | 180 | [ml] (6.09 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 | |
| 4 Weight (with oil charge) | 7.46 | [kg] (16.45 lb.) |
| 5 Nitrogen charge | 0.2 to 0.3 | [kgf/cm ²] (2.84 to 4.27 psig) |

C - ELECTRICAL 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 | 213514083 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | 4TM762NFBZZ-53 | |
| 6 Start winding resistance | 8.12 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 3.61 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 25.00 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | - | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | - | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CE - IMTRO - TUV - UKCA | |

D - PERFORMANCE - CHECK POINT DATA

| TEST CONDITIONS: @127V60Hz | | | ASHRAELBP32 Static | | Evaporating temperature (Condensing temperature | | -23.3°C (-9.94°F) 54.4°C (129.92°F) | |
|---------------------------------|----------|-----|-------------------------------|-------------------------------|--|--------------------------------|--|-------|
| Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| 665 | 168 | 195 | 129 | 1.80 | 3.78 | 5.16 | 1.30 | 1.51 |

| TEST CONDITIONS: @127V60Hz | | | ASHRAELBP32 Fan | | Evaporating temperature (Condensing temperature | | -23.3°C (-9.94°F) 54.4°C (129.92°F) | |
|---------------------------------|----------|-----|-------------------------------|-------------------------------|--|--------------------------------|--|-------|
| Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| 679 | 171 | 199 | 129 | 1.80 | 3.86 | 5.26 | 1.33 | 1.54 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @127V60Hz | | ASHRAE32 Static | | | (Condensing temperature 35°C (+95°F)) | | | | | |
|-------------------------------|-------|---------------------------------|----------|-----|---------------------------------------|----------------------------|-----------------------------|--------------------------------|-----------|-------|
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 367 | 92 | 107 | 87 | 1.69 | 2.08 | 4.21 | 1.06 | 1.23 |
| -30 | (-22) | 514 | 129 | 151 | 100 | 1.73 | 2.91 | 5.13 | 1.29 | 1.50 |
| -25 | (-13) | 689 | 174 | 202 | 114 | 1.78 | 3.91 | 6.06 | 1.53 | 1.77 |
| -20 | (- 4) | 901 | 227 | 264 | 128 | 1.84 | 5.13 | 7.04 | 1.78 | 2.06 |
| -15 | (+ 5) | 1159 | 292 | 340 | 143 | 1.90 | 6.62 | 8.13 | 2.05 | 2.38 |
| -10 | (+14) | 1472 | 371 | 431 | 157 | 1.97 | 8.44 | 9.37 | 2.36 | 2.75 |
| -5 | (+23) | 1850 | 466 | 542 | 171 | 2.06 | 10.64 | 10.80 | 2.72 | 3.16 |
| 0 | (+32) | 2300 | 580 | 674 | 185 | 2.16 | 13.28 | 12.46 | 3.14 | 3.65 |

| TEST CONDITIONS: @127V60Hz | | ASHRAE32 Static | | | (Condensing temperature 45°C (+113°F)) | | | | | |
|-------------------------------|-------|---------------------------------|----------|-----|--|----------------------------|-----------------------------|--------------------------------|-----------|-------|
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 336 | 85 | 99 | 89 | 1.70 | 1.90 | 3.76 | 0.95 | 1.10 |
| -30 | (-22) | 479 | 121 | 140 | 104 | 1.74 | 2.72 | 4.62 | 1.16 | 1.35 |
| -25 | (-13) | 648 | 163 | 190 | 119 | 1.80 | 3.68 | 5.44 | 1.37 | 1.60 |
| -20 | (- 4) | 852 | 215 | 250 | 136 | 1.87 | 4.85 | 6.28 | 1.58 | 1.84 |
| -15 | (+ 5) | 1100 | 277 | 322 | 153 | 1.95 | 6.28 | 7.18 | 1.81 | 2.10 |
| -10 | (+14) | 1401 | 353 | 411 | 171 | 2.05 | 8.03 | 8.18 | 2.06 | 2.40 |
| -5 | (+23) | 1764 | 444 | 517 | 189 | 2.16 | 10.15 | 9.33 | 2.35 | 2.73 |
| 0 | (+32) | 2197 | 554 | 644 | 208 | 2.29 | 12.69 | 10.66 | 2.69 | 3.12 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @127V60Hz | | ASHRAE32 Static | | | (Condensing temperature 55°C (+131°F)) | | | | | |
|-------------------------------|-------|---------------------------------|----------|-----|---|----------------------------|--------------------------|--------------------------------|-----------|-------|
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 288 | 73 | 85 | 90 | 1.70 | 1.63 | 3.20 | 0.81 | 0.94 |
| -30 | (-22) | 430 | 108 | 126 | 106 | 1.75 | 2.44 | 4.06 | 1.02 | 1.19 |
| -25 | (-13) | 595 | 150 | 174 | 123 | 1.82 | 3.38 | 4.85 | 1.22 | 1.42 |
| -20 | (- 4) | 793 | 200 | 232 | 142 | 1.90 | 4.51 | 5.60 | 1.41 | 1.64 |
| -15 | (+ 5) | 1033 | 260 | 303 | 162 | 2.00 | 5.90 | 6.37 | 1.61 | 1.87 |
| -10 | (+14) | 1323 | 333 | 388 | 183 | 2.11 | 7.58 | 7.20 | 1.81 | 2.11 |
| -5 | (+23) | 1674 | 422 | 490 | 206 | 2.25 | 9.63 | 8.13 | 2.05 | 2.38 |
| 0 | (+32) | 2093 | 527 | 613 | 229 | 2.41 | 12.09 | 9.20 | 2.32 | 2.70 |

| TEST CONDITIONS: @127V60Hz | | ASHRAE32 Static | | | (Condensing temperature 65°C (+149°F)) | | | | | |
|-------------------------------|-------|---------------------------------|----------|-----|---|----------------------------|--------------------------|--------------------------------|-----------|-------|
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 223 | 56 | 65 | 89 | 1.70 | 1.26 | 2.49 | 0.63 | 0.73 |
| -30 | (-22) | 365 | 92 | 107 | 106 | 1.75 | 2.07 | 3.42 | 0.86 | 1.00 |
| -25 | (-13) | 528 | 133 | 155 | 125 | 1.82 | 3.00 | 4.23 | 1.07 | 1.24 |
| -20 | (- 4) | 723 | 182 | 212 | 146 | 1.92 | 4.11 | 4.96 | 1.25 | 1.45 |
| -15 | (+ 5) | 956 | 241 | 280 | 169 | 2.03 | 5.46 | 5.67 | 1.43 | 1.66 |
| -10 | (+14) | 1239 | 312 | 363 | 194 | 2.17 | 7.10 | 6.39 | 1.61 | 1.87 |
| -5 | (+23) | 1579 | 398 | 463 | 220 | 2.34 | 9.08 | 7.16 | 1.80 | 2.10 |
| 0 | (+32) | 1986 | 500 | 582 | 248 | 2.53 | 11.47 | 8.04 | 2.03 | 2.36 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-----------------|------|--------------------------|
| 1 Base plate | Universal AMEM | | |
| 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 | | |