

COMPRESSOR DEFINITION

| | |
|---------------------------|-------------|
| Designation | EM 30HHR |
| Nominal Voltage/Frequency | 115 V 60 Hz |
| Engineering Number | 513307171 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|-------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-134a | | |
| 3 Nominal voltage and frequency | 115 / 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 | 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 | - | 97 to 135 V |
| 8.2 LBP (43°C Ambient temperature) | Static | - | 97 to 135 V |
| 8.3 HBP (32°C Ambient temperature) | Fan | - | 97 to 135 V |
| 8.4 HBP (43°C Ambient temperature) | Fan | - | 97 to 135 V |
| 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 | 1/10 | [hp] |
| 2 Displacement | 3.00 | [cm ³] (0.183 cu.in) |
| 2.1 Bore [mm] | 19.000 | |
| 2.2 Stroke [mm] | 10.600 | |
| 3 Lubricant charge | 160 | [ml] (5.41 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 | |
| 4 Weight (with oil charge) | 7.37 | [kg] (16.25 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 V 60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Current Relay | |
| 2.1 Starting device | 213515292 | |
| 3 Start capacitor | 108-130(110) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | 4TM757MFBYY-53 | |
| 6 Start winding resistance | 20.90 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 5.50 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | - | [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 | | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|---|---------------------------|--------------------------------------|-------|--|
| TEST CONDITIONS: @115V60Hz | | | ASHRAEHBP32 Static | | 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] | |
| 1390 | 350 | 407 | 163 | 2.00 | | 8.53 | 2.15 | 2.50 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|---|---------------------------|--------------------------------------|-------|--|
| 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] | |
| 1390 | 350 | 407 | 163 | 2.00 | | 8.53 | 2.15 | 2.50 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|---|---------------------------|--|-------|--|
| TEST CONDITIONS: @115V60Hz | | | 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] | |
| 310 | 78 | 91 | 97 | 1.70 | 1.76 | 3.20 | 0.81 | 0.94 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|---|---------------------------|--|-------|--|
| 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] | |
| 310 | 78 | 91 | 97 | 1.70 | 1.76 | 3.20 | 0.81 | 0.94 | |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|----------------------------|--------------------|---------|--------------------------------|----------------------------------|----------------------------|--|--------|----------|-----------|
| TEST CONDITIONS: @115V60Hz | | 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] |
| -35 | (-31) | 173 | 43 | 51 | 66 | 1.58 | 0.98 | 2.56 | 0.65 | 0.75 |
| -30 | (-22) | 247 | 62 | 72 | 77 | 1.61 | 1.40 | 3.18 | 0.80 | 0.93 |
| -25 | (-13) | 335 | 84 | 98 | 88 | 1.64 | 1.91 | 3.81 | 0.96 | 1.12 |
| -20 | (- 4) | 440 | 111 | 129 | 99 | 1.68 | 2.51 | 4.48 | 1.13 | 1.31 |
| -15 | (+ 5) | 566 | 143 | 166 | 109 | 1.71 | 3.23 | 5.21 | 1.31 | 1.53 |
| -10 | (+14) | 716 | 180 | 210 | 120 | 1.75 | 4.10 | 6.03 | 1.52 | 1.77 |
| -5 | (+23) | 894 | 225 | 262 | 129 | 1.79 | 5.14 | 6.96 | 1.76 | 2.04 |
| 0 | (+32) | 1103 | 278 | 323 | 138 | 1.83 | 6.38 | 8.03 | 2.02 | 2.35 |
| +5 | (+41) | 1346 | 339 | 394 | 146 | 1.87 | 7.84 | 9.26 | 2.33 | 2.71 |
| +10 | (+50) | 1628 | 410 | 477 | 153 | 1.92 | 9.54 | 10.67 | 2.69 | 3.13 |
| +15 | (+59) | 1951 | 492 | 572 | 158 | 1.97 | 11.52 | 12.29 | 3.10 | 3.60 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @115V60Hz | | 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) | 119 | 30 | 35 | 73 | 1.58 | 0.67 | 1.67 | 0.42 | 0.49 |
| -30 | (-22) | 198 | 50 | 58 | 83 | 1.61 | 1.13 | 2.41 | 0.61 | 0.71 |
| -25 | (-13) | 290 | 73 | 85 | 93 | 1.64 | 1.65 | 3.11 | 0.78 | 0.91 |
| -20 | (- 4) | 397 | 100 | 116 | 104 | 1.68 | 2.26 | 3.82 | 0.96 | 1.12 |
| -15 | (+ 5) | 524 | 132 | 154 | 115 | 1.72 | 2.99 | 4.54 | 1.15 | 1.33 |
| -10 | (+14) | 674 | 170 | 197 | 126 | 1.77 | 3.86 | 5.31 | 1.34 | 1.56 |
| -5 | (+23) | 850 | 214 | 249 | 137 | 1.82 | 4.89 | 6.15 | 1.55 | 1.80 |
| 0 | (+32) | 1056 | 266 | 309 | 148 | 1.88 | 6.10 | 7.08 | 1.78 | 2.08 |
| +5 | (+41) | 1295 | 326 | 379 | 159 | 1.95 | 7.54 | 8.13 | 2.05 | 2.38 |
| +10 | (+50) | 1571 | 396 | 460 | 168 | 2.02 | 9.21 | 9.32 | 2.35 | 2.73 |
| +15 | (+59) | 1888 | 476 | 553 | 178 | 2.09 | 11.14 | 10.67 | 2.69 | 3.13 |

| TEST CONDITIONS: @115V60Hz | | 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) | 88 | 22 | 26 | 76 | 1.58 | 0.49 | 1.12 | 0.28 | 0.33 |
| -30 | (-22) | 166 | 42 | 49 | 85 | 1.61 | 0.94 | 1.94 | 0.49 | 0.57 |
| -25 | (-13) | 254 | 64 | 75 | 95 | 1.64 | 1.45 | 2.70 | 0.68 | 0.79 |
| -20 | (- 4) | 358 | 90 | 105 | 106 | 1.68 | 2.04 | 3.40 | 0.86 | 1.00 |
| -15 | (+ 5) | 479 | 121 | 140 | 118 | 1.73 | 2.73 | 4.08 | 1.03 | 1.20 |
| -10 | (+14) | 622 | 157 | 182 | 131 | 1.79 | 3.56 | 4.77 | 1.20 | 1.40 |
| -5 | (+23) | 789 | 199 | 231 | 144 | 1.86 | 4.54 | 5.48 | 1.38 | 1.61 |
| 0 | (+32) | 986 | 248 | 289 | 157 | 1.94 | 5.70 | 6.24 | 1.57 | 1.83 |
| +5 | (+41) | 1214 | 306 | 356 | 171 | 2.03 | 7.06 | 7.07 | 1.78 | 2.07 |
| +10 | (+50) | 1478 | 372 | 433 | 184 | 2.12 | 8.66 | 8.00 | 2.02 | 2.34 |
| +15 | (+59) | 1781 | 449 | 522 | 197 | 2.23 | 10.51 | 9.05 | 2.28 | 2.65 |

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 | Slanted | | |
| 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 | | |