

COMPRESSOR DEFINITION

| | |
|---------------------------|-----------------|
| Designation | EM 45HHR |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number | 513307091 |

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) | Static/Fan | - | 98 to 140 V |
| 8.2 LBP (43°C Ambient temperature) | Static/Fan | - | 98 to 140 V |
| 8.3 HBP (32°C Ambient temperature) | Fan | - | 98 to 140 V |
| 8.4 HBP (43°C Ambient temperature) | Fan | - | 98 to 140 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 | 1/8 | [hp] |
| 2 Displacement | 3.77 | [cm ³] (0.230 cu.in) |
| 2.1 Bore [mm] | 19.000 | |
| 2.2 Stroke [mm] | 13.300 | |
| 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) | 7.23 | [kg] (15.94 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 | 213514105/213515292 | |
| 3 Start capacitor | 145-175(110) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | 4TM757MFBYY-53 | |
| 6 Start winding resistance | 12.95 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 4.80 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 17.00 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | 2.10 | [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 - TUV - UKCA - UL - VDE | |

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] | |
| 1775 | 447 | 520 | 206 | 2.20 | | 8.62 | 2.17 | 2.53 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--------------------------------------|-------|--|
| 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] | |
| 1775 | 447 | 520 | 206 | 2.20 | | 8.62 | 2.17 | 2.53 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|--|
| 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] | |
| 420 | 106 | 123 | 107 | 1.46 | 2.39 | 3.93 | 0.99 | 1.15 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|---|---------------------------|--|-------|--|
| 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] | |
| 420 | 106 | 123 | 107 | 1.46 | 2.39 | 3.93 | 0.99 | 1.15 | |

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) | 209 | 53 | 61 | 76 | 1.30 | 1.18 | 2.70 | 0.68 | 0.79 |
| -30 | (-22) | 314 | 79 | 92 | 86 | 1.35 | 1.78 | 3.63 | 0.92 | 1.06 |
| -25 | (-13) | 430 | 108 | 126 | 96 | 1.41 | 2.44 | 4.49 | 1.13 | 1.32 |
| -20 | (- 4) | 562 | 142 | 165 | 108 | 1.47 | 3.20 | 5.29 | 1.33 | 1.55 |
| -15 | (+ 5) | 716 | 180 | 210 | 120 | 1.55 | 4.08 | 6.05 | 1.52 | 1.77 |
| -10 | (+14) | 896 | 226 | 263 | 133 | 1.64 | 5.13 | 6.79 | 1.71 | 1.99 |
| -5 | (+23) | 1108 | 279 | 325 | 147 | 1.74 | 6.37 | 7.53 | 1.90 | 2.21 |
| 0 | (+32) | 1357 | 342 | 398 | 163 | 1.85 | 7.84 | 8.29 | 2.09 | 2.43 |
| +5 | (+41) | 1646 | 415 | 482 | 180 | 1.97 | 9.58 | 9.09 | 2.29 | 2.66 |
| +10 | (+50) | 1982 | 500 | 581 | 198 | 2.10 | 11.62 | 9.95 | 2.51 | 2.92 |
| +15 | (+59) | 2370 | 597 | 694 | 218 | 2.25 | 13.99 | 10.89 | 2.74 | 3.19 |

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) | 162 | 41 | 48 | 76 | 1.31 | 0.91 | 2.17 | 0.55 | 0.64 |
| -30 | (-22) | 269 | 68 | 79 | 87 | 1.36 | 1.53 | 3.07 | 0.77 | 0.90 |
| -25 | (-13) | 386 | 97 | 113 | 99 | 1.42 | 2.20 | 3.88 | 0.98 | 1.14 |
| -20 | (- 4) | 518 | 130 | 152 | 112 | 1.49 | 2.95 | 4.63 | 1.17 | 1.36 |
| -15 | (+ 5) | 670 | 169 | 196 | 127 | 1.58 | 3.82 | 5.33 | 1.34 | 1.56 |
| -10 | (+14) | 846 | 213 | 248 | 142 | 1.68 | 4.84 | 6.00 | 1.51 | 1.76 |
| -5 | (+23) | 1053 | 265 | 309 | 158 | 1.79 | 6.05 | 6.66 | 1.68 | 1.95 |
| 0 | (+32) | 1294 | 326 | 379 | 176 | 1.92 | 7.48 | 7.33 | 1.85 | 2.15 |
| +5 | (+41) | 1576 | 397 | 462 | 195 | 2.07 | 9.17 | 8.03 | 2.02 | 2.35 |
| +10 | (+50) | 1902 | 479 | 557 | 215 | 2.23 | 11.15 | 8.79 | 2.22 | 2.58 |
| +15 | (+59) | 2278 | 574 | 667 | 237 | 2.40 | 13.45 | 9.62 | 2.42 | 2.82 |

| 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) | 137 | 34 | 40 | 65 | 1.28 | 0.77 | 2.07 | 0.52 | 0.61 |
| -30 | (-22) | 239 | 60 | 70 | 81 | 1.34 | 1.36 | 2.85 | 0.72 | 0.84 |
| -25 | (-13) | 351 | 88 | 103 | 97 | 1.41 | 2.00 | 3.54 | 0.89 | 1.04 |
| -20 | (- 4) | 475 | 120 | 139 | 114 | 1.51 | 2.71 | 4.15 | 1.05 | 1.22 |
| -15 | (+ 5) | 618 | 156 | 181 | 133 | 1.62 | 3.52 | 4.71 | 1.19 | 1.38 |
| -10 | (+14) | 784 | 198 | 230 | 152 | 1.75 | 4.49 | 5.22 | 1.32 | 1.53 |
| -5 | (+23) | 979 | 247 | 287 | 173 | 1.90 | 5.63 | 5.72 | 1.44 | 1.68 |
| 0 | (+32) | 1207 | 304 | 354 | 195 | 2.06 | 6.98 | 6.22 | 1.57 | 1.82 |
| +5 | (+41) | 1473 | 371 | 432 | 218 | 2.25 | 8.57 | 6.75 | 1.70 | 1.98 |
| +10 | (+50) | 1783 | 449 | 522 | 243 | 2.45 | 10.45 | 7.32 | 1.84 | 2.14 |
| +15 | (+59) | 2141 | 540 | 627 | 269 | 2.67 | 12.64 | 7.95 | 2.00 | 2.33 |

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 | | |