

COMPRESSOR DEFINITION

| | |
|---------------------------|-------------------------------|
| Designation | EM 3D50HLT |
| Nominal Voltage/Frequency | 115-127 V 60 Hz / 100 V 50 Hz |
| Engineering Number | 513301669 |

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 Back Pressure | | |
| 4.1 Evaporating temperature range | -35°C to -10°C | (-31°F to 14°F) | |
| 5 Motor type | RSCR | | |
| 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 | - | 103 to 140 V |
| 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 | 4.50 | [cm ³] (0.275 cu.in) |
| 2.1 Bore [mm] | 21.000 | |
| 2.2 Stroke [mm] | 13.000 | |
| 3 Lubricant charge | 150 | [ml] (5.07 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 | |
| 4 Weight (with oil charge) | 7.42 | [kg] (16.36 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 / 100 V 50 Hz 1 ~ (Single phase) | |
| 2 Starting device type | TSD | |
| 2.1 Starting device | TSD2-115V0.6 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 12(200) | [µF(VAC minimum)] |
| 5 Motor protection | 4TM319KFBYY-53 | |
| 6 Start winding resistance | 6.17 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 5.61 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 8.00 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | 1.34 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | 1.83 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | UL | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| 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] |
| 546 | 138 | 160 | 88 | 0.77 | 3.10 | 6.23 | 1.57 | 1.83 |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|---------------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @115V60Hz | | ASHRAE32 Static | | | | (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) | 300 | 76 | 88 | 54 | 0.54 | 1.70 | 5.55 | 1.40 | 1.63 |
| -30 | (-22) | 428 | 108 | 125 | 65 | 0.60 | 2.43 | 6.58 | 1.66 | 1.93 |
| -25 | (-13) | 570 | 144 | 167 | 75 | 0.67 | 3.24 | 7.64 | 1.93 | 2.24 |
| -20 | (- 4) | 736 | 185 | 216 | 84 | 0.75 | 4.19 | 8.77 | 2.21 | 2.57 |
| -15 | (+ 5) | 934 | 235 | 274 | 93 | 0.82 | 5.33 | 10.04 | 2.53 | 2.94 |
| -10 | (+14) | 1174 | 296 | 344 | 102 | 0.90 | 6.73 | 11.48 | 2.89 | 3.36 |

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|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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] | [W/W] |
| -35 | (-31) | 253 | 64 | 74 | 54 | 0.55 | 1.43 | 4.72 | 1.19 | 1.38 |
| -30 | (-22) | 386 | 97 | 113 | 67 | 0.62 | 2.19 | 5.74 | 1.45 | 1.68 |
| -25 | (-13) | 532 | 134 | 156 | 79 | 0.71 | 3.02 | 6.71 | 1.69 | 1.97 |
| -20 | (- 4) | 699 | 176 | 205 | 91 | 0.80 | 3.98 | 7.70 | 1.94 | 2.26 |
| -15 | (+ 5) | 898 | 226 | 263 | 102 | 0.90 | 5.13 | 8.74 | 2.20 | 2.56 |
| -10 | (+14) | 1137 | 286 | 333 | 114 | 1.01 | 6.51 | 9.90 | 2.49 | 2.90 |

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|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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) | 196 | 49 | 57 | 51 | 0.54 | 1.11 | 3.88 | 0.98 | 1.14 |
| -30 | (-22) | 332 | 84 | 97 | 66 | 0.62 | 1.88 | 4.95 | 1.25 | 1.45 |
| -25 | (-13) | 479 | 121 | 140 | 81 | 0.72 | 2.72 | 5.91 | 1.49 | 1.73 |
| -20 | (- 4) | 646 | 163 | 189 | 95 | 0.83 | 3.68 | 6.81 | 1.72 | 1.99 |
| -15 | (+ 5) | 842 | 212 | 247 | 110 | 0.96 | 4.81 | 7.70 | 1.94 | 2.26 |
| -10 | (+14) | 1076 | 271 | 315 | 124 | 1.09 | 6.17 | 8.63 | 2.17 | 2.53 |

E - PERFORMANCE - CURVES

| 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) | 129 | 33 | 38 | 45 | 0.51 | 0.73 | 2.90 | 0.73 | 0.85 |
| -30 | (-22) | 265 | 67 | 78 | 63 | 0.60 | 1.51 | 4.08 | 1.03 | 1.20 |
| -25 | (-13) | 411 | 104 | 120 | 80 | 0.71 | 2.33 | 5.08 | 1.28 | 1.49 |
| -20 | (- 4) | 574 | 145 | 168 | 97 | 0.85 | 3.27 | 5.96 | 1.50 | 1.75 |
| -15 | (+ 5) | 765 | 193 | 224 | 114 | 1.00 | 4.37 | 6.76 | 1.70 | 1.98 |
| -10 | (+14) | 993 | 250 | 291 | 132 | 1.16 | 5.69 | 7.53 | 1.90 | 2.21 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|------------------|------|--------------------------|
| 1 Base plate | Universal | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 8.2 +0.12/-0.08 | [mm] | (0.323" +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 | 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 | | |