

COMPRESSOR DEFINITION

| | |
|---------------------------|-----------------|
| Designation | EM 2X3125U |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number | 513304052 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|---|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-290 | | |
| 3 Nominal voltage and frequency | 115-127 / 60 | [V / Hz] | |
| 4 Application type | Low-Medium Back Pressure (Light Commercial) | | |
| 4.1 Evaporating temperature range | -35°C to 0°C | (-31°F to 32°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/Fan | - | 103 to 140 V |
| 8.2 LBP (43°C Ambient temperature) | Static/Fan | - | 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 | 18.4 | [kgf/cm ²] (262 psig) | / °C - °F |
| 9.2 Peak | 20.6 | [kgf/cm ²] (293 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|-----------------|--|
| 1 Commercial designation | 1/3+ | [hp] |
| 2 Displacement | 6.09 | [cm ³] (0.372 cu.in) |
| 2.1 Bore [mm] | 21.000 | |
| 2.2 Stroke [mm] | 17.600 | |
| 3 Lubricant charge | 150 | [ml] (5.07 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO22 | |
| 4 Weight (with oil charge) | 7.84 | [kg] (17.28 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 | PTC | |
| 2.1 Starting device | 8EA14C3/8EA14E63/8EA21C3/QPS2-A4R7MD3/QPS2-A4R7MI | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 20(180) | [µF(VAC minimum)] |
| 5 Motor protection | CP4TMC460N61 | |
| 6 Start winding resistance | 5.41 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 2.86 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 16.80 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | 3.84 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | 4.23 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CE - IMTRO - TUV - UKCA - 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 (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] |
| 1217 | 307 | 357 | 212 | 1.89 | 3.62 | 5.74 | 1.45 | 1.68 |

| TEST CONDITIONS: @115V60Hz | | | 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] |
| 1231 | 310 | 361 | 213 | 1.90 | 3.66 | 5.79 | 1.46 | 1.70 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @115V60Hz | | ASHRAE32 Fan | | | (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) | 810 | 204 | 237 | 147 | 1.31 | 2.40 | 5.49 | 1.38 | 1.61 |
| -30 | (-22) | 1011 | 255 | 296 | 164 | 1.47 | 3.00 | 6.17 | 1.56 | 1.81 |
| -25 | (-13) | 1249 | 315 | 366 | 180 | 1.61 | 3.71 | 6.98 | 1.76 | 2.05 |
| -20 | (- 4) | 1532 | 386 | 449 | 194 | 1.74 | 4.57 | 7.91 | 1.99 | 2.32 |
| -15 | (+ 5) | 1868 | 471 | 547 | 209 | 1.87 | 5.60 | 8.97 | 2.26 | 2.63 |
| -10 | (+14) | 2262 | 570 | 663 | 223 | 1.99 | 6.81 | 10.15 | 2.56 | 2.98 |
| -5 | (+23) | 2722 | 686 | 798 | 237 | 2.12 | 8.23 | 11.47 | 2.89 | 3.36 |
| 0 | (+32) | 3255 | 820 | 954 | 252 | 2.26 | 9.90 | 12.92 | 3.25 | 3.78 |

| TEST CONDITIONS: @115V60Hz | | ASHRAE32 Fan | | | (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) | 742 | 187 | 217 | 153 | 1.36 | 2.19 | 4.85 | 1.22 | 1.42 |
| -30 | (-22) | 953 | 240 | 279 | 174 | 1.55 | 2.83 | 5.46 | 1.38 | 1.60 |
| -25 | (-13) | 1198 | 302 | 351 | 194 | 1.73 | 3.56 | 6.16 | 1.55 | 1.80 |
| -20 | (- 4) | 1484 | 374 | 435 | 213 | 1.90 | 4.43 | 6.94 | 1.75 | 2.03 |
| -15 | (+ 5) | 1817 | 458 | 532 | 232 | 2.07 | 5.44 | 7.81 | 1.97 | 2.29 |
| -10 | (+14) | 2205 | 556 | 646 | 251 | 2.24 | 6.64 | 8.78 | 2.21 | 2.57 |
| -5 | (+23) | 2654 | 669 | 778 | 270 | 2.42 | 8.03 | 9.83 | 2.48 | 2.88 |
| 0 | (+32) | 3172 | 799 | 929 | 289 | 2.61 | 9.64 | 10.99 | 2.77 | 3.22 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @115V60Hz | | ASHRAE32 Fan | | | (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) | 665 | 168 | 195 | 154 | 1.38 | 1.97 | 4.34 | 1.09 | 1.27 |
| -30 | (-22) | 885 | 223 | 259 | 180 | 1.60 | 2.62 | 4.91 | 1.24 | 1.44 |
| -25 | (-13) | 1134 | 286 | 332 | 204 | 1.82 | 3.37 | 5.54 | 1.40 | 1.62 |
| -20 | (- 4) | 1420 | 358 | 416 | 228 | 2.04 | 4.23 | 6.22 | 1.57 | 1.82 |
| -15 | (+ 5) | 1748 | 441 | 512 | 251 | 2.25 | 5.24 | 6.94 | 1.75 | 2.03 |
| -10 | (+14) | 2127 | 536 | 623 | 275 | 2.47 | 6.40 | 7.73 | 1.95 | 2.26 |
| -5 | (+23) | 2564 | 646 | 751 | 299 | 2.69 | 7.75 | 8.57 | 2.16 | 2.51 |
| 0 | (+32) | 3064 | 772 | 898 | 323 | 2.93 | 9.31 | 9.47 | 2.39 | 2.78 |

| TEST CONDITIONS: @115V60Hz | | ASHRAE32 Fan | | | (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) | 581 | 146 | 170 | 151 | 1.35 | 1.72 | 3.85 | 0.97 | 1.13 |
| -30 | (-22) | 806 | 203 | 236 | 181 | 1.61 | 2.39 | 4.43 | 1.12 | 1.30 |
| -25 | (-13) | 1057 | 266 | 310 | 210 | 1.87 | 3.14 | 5.03 | 1.27 | 1.47 |
| -20 | (- 4) | 1340 | 338 | 393 | 238 | 2.13 | 4.00 | 5.64 | 1.42 | 1.65 |
| -15 | (+ 5) | 1662 | 419 | 487 | 267 | 2.39 | 4.98 | 6.26 | 1.58 | 1.83 |
| -10 | (+14) | 2029 | 511 | 595 | 295 | 2.65 | 6.10 | 6.91 | 1.74 | 2.02 |
| -5 | (+23) | 2450 | 617 | 718 | 324 | 2.93 | 7.41 | 7.57 | 1.91 | 2.22 |
| 0 | (+32) | 2930 | 738 | 859 | 354 | 3.22 | 8.91 | 8.26 | 2.08 | 2.42 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-----------------|------|--------------------------|
| 1 Base plate | Universal EUEM | | |
| 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 | 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 | | |