

COMPRESSOR DEFINITION

| | |
|---------------------------|-----------------|
| Designation | EM 2U3111U |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number | 513305615 |

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 | - | 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 | 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 | 1/6 | [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 | 150 | [ml] (5.07 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO22 | |
| 4 Weight (with oil charge) | 7.08 | [kg] (15.61 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 | 8EA14C3/8EA14E62/8EA14E63/QPS2-A4R7MD3 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 12(180) | [µF(VAC minimum)] |
| 5 Motor protection | DRB35N61A2 | |
| 6 Start winding resistance | 7.95 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 6.90 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 8.90 | [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 - TUV - UKCA | |

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] | |
| 581 | 146 | 170 | 103 | 0.91 | 1.73 | 5.67 | 1.43 | 1.66 | |

| 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] | |
| 599 | 151 | 175 | 104 | 0.92 | 1.78 | 5.76 | 1.45 | 1.69 | |

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) | 400 | 101 | 117 | 75 | 0.68 | 1.18 | 5.29 | 1.33 | 1.55 |
| -30 | (-22) | 507 | 128 | 148 | 83 | 0.74 | 1.50 | 6.10 | 1.54 | 1.79 |
| -25 | (-13) | 631 | 159 | 185 | 90 | 0.80 | 1.88 | 6.99 | 1.76 | 2.05 |
| -20 | (- 4) | 778 | 196 | 228 | 98 | 0.87 | 2.32 | 7.99 | 2.01 | 2.34 |
| -15 | (+ 5) | 950 | 240 | 279 | 105 | 0.93 | 2.85 | 9.12 | 2.30 | 2.67 |
| -10 | (+14) | 1154 | 291 | 338 | 111 | 0.99 | 3.47 | 10.42 | 2.63 | 3.05 |
| -5 | (+23) | 1392 | 351 | 408 | 117 | 1.04 | 4.21 | 11.93 | 3.01 | 3.50 |
| 0 | (+32) | 1669 | 420 | 489 | 122 | 1.09 | 5.07 | 13.66 | 3.44 | 4.00 |

| 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) | 357 | 90 | 104 | 77 | 0.69 | 1.06 | 4.62 | 1.16 | 1.35 |
| -30 | (-22) | 466 | 117 | 136 | 86 | 0.76 | 1.38 | 5.40 | 1.36 | 1.58 |
| -25 | (-13) | 590 | 149 | 173 | 95 | 0.84 | 1.76 | 6.21 | 1.56 | 1.82 |
| -20 | (- 4) | 735 | 185 | 215 | 104 | 0.92 | 2.19 | 7.06 | 1.78 | 2.07 |
| -15 | (+ 5) | 904 | 228 | 265 | 113 | 1.00 | 2.71 | 7.99 | 2.01 | 2.34 |
| -10 | (+14) | 1101 | 277 | 322 | 122 | 1.08 | 3.31 | 9.04 | 2.28 | 2.65 |
| -5 | (+23) | 1330 | 335 | 390 | 130 | 1.16 | 4.02 | 10.23 | 2.58 | 3.00 |
| 0 | (+32) | 1596 | 402 | 468 | 138 | 1.23 | 4.85 | 11.60 | 2.92 | 3.40 |

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) | 298 | 75 | 87 | 78 | 0.70 | 0.88 | 3.87 | 0.98 | 1.13 |
| -30 | (-22) | 410 | 103 | 120 | 87 | 0.78 | 1.22 | 4.68 | 1.18 | 1.37 |
| -25 | (-13) | 534 | 135 | 157 | 98 | 0.87 | 1.59 | 5.45 | 1.37 | 1.60 |
| -20 | (- 4) | 677 | 171 | 198 | 109 | 0.96 | 2.02 | 6.22 | 1.57 | 1.82 |
| -15 | (+ 5) | 841 | 212 | 246 | 120 | 1.06 | 2.52 | 7.01 | 1.77 | 2.05 |
| -10 | (+14) | 1031 | 260 | 302 | 131 | 1.16 | 3.10 | 7.86 | 1.98 | 2.30 |
| -5 | (+23) | 1252 | 315 | 367 | 142 | 1.26 | 3.78 | 8.80 | 2.22 | 2.58 |
| 0 | (+32) | 1506 | 380 | 441 | 153 | 1.36 | 4.58 | 9.86 | 2.49 | 2.89 |

| 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) | 231 | 58 | 68 | 77 | 0.70 | 0.68 | 3.00 | 0.76 | 0.88 |
| -30 | (-22) | 344 | 87 | 101 | 88 | 0.79 | 1.02 | 3.89 | 0.98 | 1.14 |
| -25 | (-13) | 469 | 118 | 137 | 100 | 0.89 | 1.39 | 4.69 | 1.18 | 1.37 |
| -20 | (- 4) | 609 | 153 | 178 | 112 | 0.99 | 1.82 | 5.43 | 1.37 | 1.59 |
| -15 | (+ 5) | 768 | 194 | 225 | 126 | 1.11 | 2.30 | 6.14 | 1.55 | 1.80 |
| -10 | (+14) | 952 | 240 | 279 | 139 | 1.23 | 2.86 | 6.85 | 1.73 | 2.01 |
| -5 | (+23) | 1163 | 293 | 341 | 153 | 1.36 | 3.52 | 7.59 | 1.91 | 2.23 |
| 0 | (+32) | 1406 | 354 | 412 | 167 | 1.49 | 4.27 | 8.40 | 2.12 | 2.46 |

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 | | |