

COMPRESSOR DEFINITION

| | |
|---------------------------|-----------------|
| Designation | EM 2X3121U |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number | 513304097 |

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 - Curves until T.Evap - | | |
| 4.1 Evaporating temperature range | -40°C to 0°C | (-40°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 | 1/3 | [hp] |
| 2 Displacement | 5.54 | [cm ³] (0.338 cu.in) |
| 2.1 Bore [mm] | 21.000 | |
| 2.2 Stroke [mm] | 16.000 | |
| 3 Lubricant charge | 180 | [ml] (6.09 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 | |
| 4 Weight (with oil charge) | 7.84 | [kg] (17.28 lb.) |
| 5 Nitrogen charge | - | [kgf/cm ²] |

C - ELETRICAL 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/QPS2-A4R7MD3/QPS2-A4R7MD3 094 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 20(180) | [µF(VAC minimum)] |
| 5 Motor protection | DRB230N61B*F | |
| 6 Start winding resistance | 5.30 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 3.26 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 16.90 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | 1.85 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | 2.36 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CE - 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 +/- 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] |
| 1185 | 299 | 347 | 193 | 1.73 | 3.53 | 6.14 | 1.55 | 1.80 |

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| 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] |
| 1208 | 304 | 354 | 194 | 1.74 | 3.60 | 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] |
| -40 (-40) | 604 | 152 | 177 | 115 | 1.09 | 1.78 | 5.22 | 1.32 | 1.53 |
| -35 (-31) | 775 | 195 | 227 | 135 | 1.23 | 2.29 | 5.72 | 1.44 | 1.68 |
| -30 (-22) | 975 | 246 | 286 | 152 | 1.36 | 2.89 | 6.41 | 1.62 | 1.88 |
| -25 (-13) | 1209 | 305 | 354 | 166 | 1.49 | 3.59 | 7.28 | 1.83 | 2.13 |
| -20 (- 4) | 1480 | 373 | 434 | 179 | 1.61 | 4.42 | 8.29 | 2.09 | 2.43 |
| -15 (+ 5) | 1792 | 452 | 525 | 191 | 1.72 | 5.37 | 9.44 | 2.38 | 2.77 |
| -10 (+14) | 2150 | 542 | 630 | 201 | 1.82 | 6.47 | 10.70 | 2.70 | 3.14 |
| -5 (+23) | 2557 | 644 | 749 | 212 | 1.90 | 7.73 | 12.05 | 3.04 | 3.53 |
| 0 (+32) | 3017 | 760 | 884 | 224 | 1.97 | 9.17 | 13.48 | 3.40 | 3.95 |

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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] |
| -40 (-40) | 563 | 142 | 165 | 127 | 1.11 | 1.66 | 4.45 | 1.12 | 1.30 |
| -35 (-31) | 732 | 184 | 214 | 146 | 1.27 | 2.17 | 4.96 | 1.25 | 1.45 |
| -30 (-22) | 930 | 234 | 272 | 164 | 1.42 | 2.76 | 5.62 | 1.42 | 1.65 |
| -25 (-13) | 1160 | 292 | 340 | 179 | 1.58 | 3.45 | 6.42 | 1.62 | 1.88 |
| -20 (- 4) | 1426 | 359 | 418 | 194 | 1.74 | 4.26 | 7.33 | 1.85 | 2.15 |
| -15 (+ 5) | 1733 | 437 | 508 | 208 | 1.89 | 5.19 | 8.33 | 2.10 | 2.44 |
| -10 (+14) | 2085 | 525 | 611 | 222 | 2.03 | 6.27 | 9.40 | 2.37 | 2.75 |
| -5 (+23) | 2484 | 626 | 728 | 236 | 2.17 | 7.51 | 10.52 | 2.65 | 3.08 |
| 0 (+32) | 2936 | 740 | 860 | 252 | 2.29 | 8.93 | 11.67 | 2.94 | 3.42 |

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] |
| -40 | (-40) | 500 | 126 | 147 | 121 | 1.12 | 1.48 | 4.21 | 1.06 | 1.23 |
| -35 | (-31) | 668 | 168 | 196 | 142 | 1.29 | 1.98 | 4.73 | 1.19 | 1.39 |
| -30 | (-22) | 864 | 218 | 253 | 162 | 1.48 | 2.56 | 5.36 | 1.35 | 1.57 |
| -25 | (-13) | 1091 | 275 | 320 | 180 | 1.66 | 3.24 | 6.09 | 1.53 | 1.78 |
| -20 | (- 4) | 1354 | 341 | 397 | 198 | 1.85 | 4.04 | 6.88 | 1.73 | 2.02 |
| -15 | (+ 5) | 1656 | 417 | 485 | 216 | 2.04 | 4.96 | 7.73 | 1.95 | 2.26 |
| -10 | (+14) | 2002 | 504 | 587 | 235 | 2.23 | 6.02 | 8.61 | 2.17 | 2.52 |
| -5 | (+23) | 2395 | 603 | 702 | 254 | 2.42 | 7.24 | 9.50 | 2.39 | 2.78 |
| 0 | (+32) | 2839 | 715 | 832 | 276 | 2.60 | 8.63 | 10.38 | 2.61 | 3.04 |

| 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] |
| -40 | (-40) | 415 | 105 | 122 | 125 | 1.11 | 1.22 | 3.32 | 0.84 | 0.97 |
| -35 | (-31) | 583 | 147 | 171 | 149 | 1.31 | 1.72 | 3.85 | 0.97 | 1.13 |
| -30 | (-22) | 777 | 196 | 228 | 173 | 1.52 | 2.30 | 4.45 | 1.12 | 1.30 |
| -25 | (-13) | 1003 | 253 | 294 | 196 | 1.74 | 2.98 | 5.10 | 1.28 | 1.49 |
| -20 | (- 4) | 1262 | 318 | 370 | 219 | 1.96 | 3.76 | 5.78 | 1.46 | 1.69 |
| -15 | (+ 5) | 1560 | 393 | 457 | 243 | 2.19 | 4.67 | 6.47 | 1.63 | 1.90 |
| -10 | (+14) | 1901 | 479 | 557 | 268 | 2.42 | 5.72 | 7.15 | 1.80 | 2.10 |
| -5 | (+23) | 2288 | 577 | 670 | 295 | 2.66 | 6.92 | 7.81 | 1.97 | 2.29 |
| 0 | (+32) | 2725 | 687 | 799 | 324 | 2.89 | 8.28 | 8.41 | 2.12 | 2.46 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|--------------------------------|------|--------------------------|
| 1 Base plate | Universal EUEM | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 6.1 +0.10/+0.00 | [mm] | (0.240" +0.004"/+0.000") |
| 3.1.1 Material | Copper | | |
| 3.1.2 Shape | Slanted 42° up + 45° to Back | | |
| 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 parallel BP+24°to Back | | |
| 3.3 PROCESS | 6.1 +0.10/+0.00 | [mm] | (0.240" +0.004"/+0.000") |
| 3.3.1 Material | Copper | | |
| 3.3.2 Shape | Slanted 45° up + 45° to Back | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |