

COMPRESSOR DEFINITION

| | |
|---------------------------|-------------|
| Designation | EM 2X1121U |
| Nominal Voltage/Frequency | 220 V 60 Hz |
| Engineering Number | 513304047 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-290 | | |
| 3 Nominal voltage and frequency | 220 / 60 | [V / Hz] | |
| 4 Application type | Low Back Pressure R290 | | |
| 4.1 Evaporating temperature range | -40°C to -10°C | (-40°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) | Fan | - | 198 to 242 V |
| 8.2 LBP (43°C Ambient temperature) | Fan | - | 198 to 242 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 | 150 | [ml] (5.07 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 | |
| 4 Weight (with oil charge) | 8.03 | [kg] (17.70 lb.) |
| 5 Nitrogen charge | - | [kgf/cm ²] |

C - ELETRICAL DATA

| | | |
|--|--------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220 V 60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | PTC | |
| 2.1 Starting device | 8EA17C3/QPS2-A22MD3 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 5(330) | [µF(VAC minimum)] |
| 5 Motor protection | CP4TMC291K61 | |
| 6 Start winding resistance | 15.50 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 8.90 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | - | [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 | IMTRO - TUV | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS: @220V60Hz | | | 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] |
| 1117 | 281 | 327 | 184 | 0.89 | 3.32 | 6.07 | 1.53 | 1.78 |

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS: @220V60Hz | | | 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] |
| 1120 | 282 | 328 | 184 | 0.89 | 3.33 | 6.07 | 1.53 | 1.78 |

E - PERFORMANCE - CURVES

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|-----------------|--------------------------------|---------------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @220V60Hz | | | ASHRAE32 Fan | | (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) | 525 | 132 | 154 | 112 | 0.55 | 1.55 | 4.66 | 1.17 | 1.36 |
| -35 (-31) | 695 | 175 | 204 | 127 | 0.62 | 2.06 | 5.50 | 1.39 | 1.61 |
| -30 (-22) | 902 | 227 | 264 | 142 | 0.68 | 2.67 | 6.39 | 1.61 | 1.87 |
| -25 (-13) | 1146 | 289 | 336 | 156 | 0.75 | 3.41 | 7.34 | 1.85 | 2.15 |
| -20 (- 4) | 1430 | 360 | 419 | 171 | 0.82 | 4.27 | 8.35 | 2.10 | 2.45 |
| -15 (+ 5) | 1754 | 442 | 514 | 186 | 0.88 | 5.25 | 9.41 | 2.37 | 2.76 |
| -10 (+14) | 2119 | 534 | 621 | 201 | 0.95 | 6.38 | 10.53 | 2.65 | 3.09 |

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|-----------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @220V60Hz | | | ASHRAE32 Fan | | (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) | 467 | 118 | 137 | 116 | 0.56 | 1.38 | 4.00 | 1.01 | 1.17 |
| -35 (-31) | 634 | 160 | 186 | 133 | 0.64 | 1.88 | 4.78 | 1.20 | 1.40 |
| -30 (-22) | 834 | 210 | 244 | 150 | 0.72 | 2.47 | 5.57 | 1.40 | 1.63 |
| -25 (-13) | 1067 | 269 | 313 | 167 | 0.80 | 3.17 | 6.39 | 1.61 | 1.87 |
| -20 (- 4) | 1335 | 336 | 391 | 184 | 0.88 | 3.98 | 7.24 | 1.82 | 2.12 |
| -15 (+ 5) | 1639 | 413 | 480 | 202 | 0.96 | 4.91 | 8.11 | 2.04 | 2.38 |
| -10 (+14) | 1980 | 499 | 580 | 220 | 1.04 | 5.96 | 9.01 | 2.27 | 2.64 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 Fan | | | (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) | 403 | 101 | 118 | 117 | 0.57 | 1.19 | 3.44 | 0.87 | 1.01 |
| -35 | (-31) | 571 | 144 | 167 | 137 | 0.66 | 1.69 | 4.18 | 1.05 | 1.22 |
| -30 | (-22) | 767 | 193 | 225 | 156 | 0.75 | 2.27 | 4.91 | 1.24 | 1.44 |
| -25 | (-13) | 993 | 250 | 291 | 176 | 0.84 | 2.95 | 5.63 | 1.42 | 1.65 |
| -20 | (- 4) | 1250 | 315 | 366 | 197 | 0.94 | 3.73 | 6.35 | 1.60 | 1.86 |
| -15 | (+ 5) | 1538 | 388 | 451 | 218 | 1.04 | 4.61 | 7.06 | 1.78 | 2.07 |
| -10 | (+14) | 1859 | 469 | 545 | 240 | 1.14 | 5.59 | 7.77 | 1.96 | 2.28 |

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 Fan | | | (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) | 337 | 85 | 99 | 115 | 0.55 | 0.99 | 2.96 | 0.75 | 0.87 |
| -35 | (-31) | 511 | 129 | 150 | 138 | 0.66 | 1.51 | 3.70 | 0.93 | 1.08 |
| -30 | (-22) | 709 | 179 | 208 | 161 | 0.76 | 2.10 | 4.39 | 1.11 | 1.29 |
| -25 | (-13) | 932 | 235 | 273 | 184 | 0.87 | 2.77 | 5.05 | 1.27 | 1.48 |
| -20 | (- 4) | 1181 | 298 | 346 | 208 | 0.99 | 3.52 | 5.67 | 1.43 | 1.66 |
| -15 | (+ 5) | 1459 | 368 | 427 | 233 | 1.10 | 4.37 | 6.26 | 1.58 | 1.83 |
| -10 | (+14) | 1764 | 445 | 517 | 259 | 1.23 | 5.31 | 6.80 | 1.71 | 1.99 |

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 | | |