

COMPRESSOR DEFINITION

| | |
|---------------------------|-------------|
| Designation | EM 2U3115Z |
| Nominal Voltage/Frequency | 220 V 60 Hz |
| Engineering Number | 513305593 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-134a | | |
| 3 Nominal voltage and frequency | 220 / 60 | [V / Hz] | |
| 4 Application type | Low-Medium (Plus) Back Pressure | | |
| 4.1 Evaporating temperature range | -35°C to 0°C | (-31°F to 32°F) | |
| 5 Motor type | CSIR | | |
| 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) | - | - | - |
| 8.2 LBP (43°C Ambient temperature) | Static | - | 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 | 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 | 1/4+ | [hp] |
| 2 Displacement | 6.60 | [cm ³] (0.403 cu.in) |
| 2.1 Bore [mm] | 22.500 | |
| 2.2 Stroke [mm] | 16.600 | |
| 3 Lubricant charge | 180 | [ml] (6.09 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 | |
| 4 Weight (with oil charge) | 7.44 | [kg] (16.40 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 | 220 V 60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Current Relay | |
| 2.1 Starting device | 213515005 | |
| 3 Start capacitor | 88-108(158) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | 4TM743KDBYY-53 | |
| 6 Start winding resistance | 26.40 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 13.50 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 10.70 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | 1.59 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | 1.79 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CE - IMTRO - TUV - UKCA | |

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] |
| 757 | 191 | 222 | 148 | 1.05 | 4.30 | 5.11 | 1.29 | 1.50 |

| 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] |
| 781 | 197 | 229 | 148 | 1.05 | 4.44 | 5.27 | 1.33 | 1.54 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V60Hz | | 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) | 430 | 108 | 126 | 97 | 0.92 | 2.43 | 4.42 | 1.11 | 1.30 |
| -30 | (-22) | 591 | 149 | 173 | 112 | 0.95 | 3.35 | 5.29 | 1.33 | 1.55 |
| -25 | (-13) | 785 | 198 | 230 | 128 | 0.99 | 4.46 | 6.17 | 1.55 | 1.81 |
| -20 | (- 4) | 1022 | 258 | 300 | 144 | 1.04 | 5.82 | 7.10 | 1.79 | 2.08 |
| -15 | (+ 5) | 1311 | 330 | 384 | 162 | 1.09 | 7.49 | 8.11 | 2.04 | 2.38 |
| -10 | (+14) | 1661 | 419 | 487 | 180 | 1.15 | 9.52 | 9.25 | 2.33 | 2.71 |
| -5 | (+23) | 2082 | 525 | 610 | 197 | 1.22 | 11.98 | 10.54 | 2.66 | 3.09 |
| 0 | (+32) | 2583 | 651 | 757 | 215 | 1.30 | 14.92 | 12.03 | 3.03 | 3.53 |

| TEST CONDITIONS: @220V60Hz | | 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) | 395 | 99 | 116 | 103 | 0.94 | 2.23 | 3.82 | 0.96 | 1.12 |
| -30 | (-22) | 554 | 140 | 162 | 118 | 0.97 | 3.14 | 4.67 | 1.18 | 1.37 |
| -25 | (-13) | 743 | 187 | 218 | 135 | 1.01 | 4.22 | 5.48 | 1.38 | 1.61 |
| -20 | (- 4) | 971 | 245 | 285 | 154 | 1.06 | 5.53 | 6.29 | 1.58 | 1.84 |
| -15 | (+ 5) | 1248 | 314 | 366 | 175 | 1.13 | 7.12 | 7.12 | 1.80 | 2.09 |
| -10 | (+14) | 1582 | 399 | 464 | 197 | 1.21 | 9.07 | 8.03 | 2.02 | 2.35 |
| -5 | (+23) | 1984 | 500 | 581 | 220 | 1.30 | 11.41 | 9.04 | 2.28 | 2.65 |
| 0 | (+32) | 2462 | 620 | 722 | 244 | 1.40 | 14.22 | 10.19 | 2.57 | 2.99 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V60Hz | | 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) | 339 | 85 | 99 | 109 | 0.96 | 1.92 | 3.13 | 0.79 | 0.92 |
| -30 | (-22) | 498 | 125 | 146 | 123 | 0.99 | 2.82 | 4.03 | 1.01 | 1.18 |
| -25 | (-13) | 683 | 172 | 200 | 141 | 1.03 | 3.88 | 4.82 | 1.22 | 1.41 |
| -20 | (- 4) | 905 | 228 | 265 | 163 | 1.09 | 5.15 | 5.56 | 1.40 | 1.63 |
| -15 | (+ 5) | 1171 | 295 | 343 | 186 | 1.17 | 6.68 | 6.28 | 1.58 | 1.84 |
| -10 | (+14) | 1492 | 376 | 437 | 213 | 1.27 | 8.55 | 7.01 | 1.77 | 2.05 |
| -5 | (+23) | 1876 | 473 | 550 | 241 | 1.38 | 10.79 | 7.79 | 1.96 | 2.28 |
| 0 | (+32) | 2334 | 588 | 684 | 271 | 1.51 | 13.48 | 8.66 | 2.18 | 2.54 |

| TEST CONDITIONS: @220V60Hz | | 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) | 263 | 66 | 77 | 113 | 0.98 | 1.49 | 2.32 | 0.59 | 0.68 |
| -30 | (-22) | 423 | 107 | 124 | 127 | 1.00 | 2.40 | 3.31 | 0.83 | 0.97 |
| -25 | (-13) | 607 | 153 | 178 | 146 | 1.05 | 3.45 | 4.15 | 1.05 | 1.22 |
| -20 | (- 4) | 823 | 207 | 241 | 169 | 1.12 | 4.68 | 4.88 | 1.23 | 1.43 |
| -15 | (+ 5) | 1081 | 272 | 317 | 196 | 1.21 | 6.17 | 5.53 | 1.39 | 1.62 |
| -10 | (+14) | 1390 | 350 | 407 | 227 | 1.32 | 7.96 | 6.14 | 1.55 | 1.80 |
| -5 | (+23) | 1759 | 443 | 516 | 260 | 1.45 | 10.12 | 6.75 | 1.70 | 1.98 |
| 0 | (+32) | 2198 | 554 | 644 | 297 | 1.60 | 12.70 | 7.39 | 1.86 | 2.17 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-----------------|------|--------------------------|
| 1 Base plate | Universal AMEM | | |
| 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 | | |