

COMPRESSOR DEFINITION

| | |
|---------------------------|--------------------|
| Designation | EM 2X3125U |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number | 513304083 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|---------------------------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-290 | | |
| 3 Nominal voltage and frequency | 220-240 / 50-60 | [V / Hz] | |
| 4 Application type | Low-Medium Back Pressure (Commercial Compressors) | | |
| 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 | 198 to 255 V | 198 to 255 V |
| 8.2 LBP (43°C Ambient temperature) | Static | 198 to 255 V | 198 to 255 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 | ESTER / 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 - ELETRICAL DATA

| | | |
|----------------------------------------------|------------------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220-240 V 50-60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | PTC | |
| 2.1 Starting device | 8EA17C3/8EA17E61/8EA17E62/8EA17E63/QPS2-A22MD3 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 5(450) | [µF(VAC minimum)] |
| 5 Motor protection | 4TM283RFBYY-53 | |
| 6 Start winding resistance | 20.80 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 11.70 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50/60 Hz) | 8.20/7.80 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz) | 1.80/1.70 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50/60 Hz) | 2.00/1.90 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CE - IMTRO - IRAM - ISI - TUV - UKCA - VDE | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|-----------------------------------------------------|---------------------------|----------------------------------------|-------|--|
| TEST CONDITIONS: @220V50Hz | | | 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] | |
| 1033 | 260 | 303 | 181 | 0.91 | 3.07 | 5.71 | 1.44 | 1.67 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|-----------------------------------------------------|---------------------------|----------------------------------------|-------|--|
| TEST CONDITIONS: @220V50Hz | | | 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] | |
| 1042 | 263 | 305 | 180 | 0.93 | 3.10 | 5.80 | 1.46 | 1.70 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|-----------------------------------------------------|---------------------------|----------------------------------------|-------|--|
| 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] | |
| 1257 | 317 | 368 | 220 | 1.01 | 3.74 | 5.71 | 1.44 | 1.67 | |

| | | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|-----------------------------------------------------|---------------------------|----------------------------------------|-------|--|
| 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] | |
| 1271 | 320 | 372 | 218 | | 3.78 | 5.82 | 1.47 | 1.71 | |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|----------------------------|-----------------|---------|-----------------------------|-------------------------------|-------------------------|---------------------------------------|--------|----------|-----------|
| TEST CONDITIONS: @220V50Hz | | 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] |
| -35 | (-31) | 688 | 173 | 202 | 128 | 0.71 | 2.04 | 5.37 | 1.35 | 1.57 |
| -30 | (-22) | 874 | 220 | 256 | 143 | 0.77 | 2.59 | 6.10 | 1.54 | 1.79 |
| -25 | (-13) | 1097 | 276 | 321 | 158 | 0.82 | 3.26 | 6.95 | 1.75 | 2.04 |
| -20 | (- 4) | 1360 | 343 | 398 | 172 | 0.88 | 4.06 | 7.93 | 2.00 | 2.32 |
| -15 | (+ 5) | 1664 | 419 | 488 | 184 | 0.94 | 4.99 | 9.05 | 2.28 | 2.65 |
| -10 | (+14) | 2012 | 507 | 589 | 196 | 0.99 | 6.05 | 10.33 | 2.60 | 3.03 |
| -5 | (+23) | 2404 | 606 | 704 | 205 | 1.03 | 7.27 | 11.77 | 2.97 | 3.45 |
| 0 | (+32) | 2844 | 717 | 833 | 211 | 1.05 | 8.65 | 13.40 | 3.38 | 3.93 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V50Hz | | 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] |
| -35 | (-31) | 654 | 165 | 192 | 136 | 0.74 | 1.94 | 4.83 | 1.22 | 1.42 |
| -30 | (-22) | 831 | 209 | 244 | 152 | 0.80 | 2.46 | 5.46 | 1.38 | 1.60 |
| -25 | (-13) | 1045 | 263 | 306 | 169 | 0.87 | 3.11 | 6.16 | 1.55 | 1.80 |
| -20 | (- 4) | 1298 | 327 | 380 | 186 | 0.94 | 3.87 | 6.95 | 1.75 | 2.04 |
| -15 | (+ 5) | 1592 | 401 | 466 | 202 | 1.01 | 4.77 | 7.85 | 1.98 | 2.30 |
| -10 | (+14) | 1929 | 486 | 565 | 217 | 1.08 | 5.80 | 8.87 | 2.24 | 2.60 |
| -5 | (+23) | 2310 | 582 | 677 | 231 | 1.14 | 6.99 | 10.02 | 2.52 | 2.93 |
| 0 | (+32) | 2738 | 690 | 802 | 243 | 1.19 | 8.32 | 11.30 | 2.85 | 3.31 |

| TEST CONDITIONS: @220V50Hz | | 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] |
| -35 | (-31) | 614 | 155 | 180 | 141 | 0.76 | 1.82 | 4.38 | 1.10 | 1.28 |
| -30 | (-22) | 782 | 197 | 229 | 159 | 0.83 | 2.32 | 4.94 | 1.24 | 1.45 |
| -25 | (-13) | 986 | 248 | 289 | 178 | 0.91 | 2.93 | 5.54 | 1.40 | 1.62 |
| -20 | (- 4) | 1229 | 310 | 360 | 198 | 0.99 | 3.67 | 6.20 | 1.56 | 1.82 |
| -15 | (+ 5) | 1513 | 381 | 443 | 217 | 1.08 | 4.53 | 6.93 | 1.75 | 2.03 |
| -10 | (+14) | 1839 | 463 | 539 | 237 | 1.17 | 5.53 | 7.73 | 1.95 | 2.27 |
| -5 | (+23) | 2209 | 557 | 647 | 255 | 1.25 | 6.68 | 8.63 | 2.18 | 2.53 |
| 0 | (+32) | 2625 | 662 | 769 | 273 | 1.33 | 7.98 | 9.63 | 2.43 | 2.82 |

| TEST CONDITIONS: @220V50Hz | | 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] |
| -35 | (-31) | 567 | 143 | 166 | 144 | 0.77 | 1.68 | 3.91 | 0.98 | 1.14 |
| -30 | (-22) | 726 | 183 | 213 | 164 | 0.85 | 2.15 | 4.46 | 1.12 | 1.31 |
| -25 | (-13) | 921 | 232 | 270 | 185 | 0.94 | 2.74 | 5.01 | 1.26 | 1.47 |
| -20 | (- 4) | 1155 | 291 | 338 | 208 | 1.04 | 3.44 | 5.59 | 1.41 | 1.64 |
| -15 | (+ 5) | 1428 | 360 | 418 | 231 | 1.14 | 4.28 | 6.19 | 1.56 | 1.81 |
| -10 | (+14) | 1743 | 439 | 511 | 255 | 1.25 | 5.24 | 6.84 | 1.72 | 2.00 |
| -5 | (+23) | 2102 | 530 | 616 | 279 | 1.35 | 6.36 | 7.54 | 1.90 | 2.21 |
| 0 | (+32) | 2507 | 632 | 735 | 302 | 1.46 | 7.62 | 8.30 | 2.09 | 2.43 |

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] |
| -35 | (-31) | 859 | 216 | 252 | 155 | 0.71 | 2.54 | 5.53 | 1.39 | 1.62 |
| -30 | (-22) | 1064 | 268 | 312 | 171 | 0.78 | 3.16 | 6.23 | 1.57 | 1.83 |
| -25 | (-13) | 1315 | 331 | 385 | 188 | 0.86 | 3.91 | 7.02 | 1.77 | 2.06 |
| -20 | (- 4) | 1614 | 407 | 473 | 205 | 0.94 | 4.82 | 7.91 | 1.99 | 2.32 |
| -15 | (+ 5) | 1965 | 495 | 576 | 221 | 1.02 | 5.89 | 8.93 | 2.25 | 2.62 |
| -10 | (+14) | 2370 | 597 | 695 | 236 | 1.08 | 7.13 | 10.10 | 2.54 | 2.96 |
| -5 | (+23) | 2833 | 714 | 830 | 248 | 1.14 | 8.57 | 11.43 | 2.88 | 3.35 |
| 0 | (+32) | 3355 | 846 | 983 | 258 | 1.19 | 10.20 | 12.97 | 3.27 | 3.80 |

| 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] |
| -35 | (-31) | 790 | 199 | 231 | 160 | 0.74 | 2.34 | 4.96 | 1.25 | 1.45 |
| -30 | (-22) | 998 | 252 | 292 | 179 | 0.83 | 2.96 | 5.57 | 1.40 | 1.63 |
| -25 | (-13) | 1249 | 315 | 366 | 200 | 0.92 | 3.71 | 6.22 | 1.57 | 1.82 |
| -20 | (- 4) | 1545 | 389 | 453 | 221 | 1.02 | 4.61 | 6.94 | 1.75 | 2.03 |
| -15 | (+ 5) | 1889 | 476 | 554 | 243 | 1.12 | 5.66 | 7.74 | 1.95 | 2.27 |
| -10 | (+14) | 2285 | 576 | 669 | 263 | 1.22 | 6.87 | 8.65 | 2.18 | 2.53 |
| -5 | (+23) | 2734 | 689 | 801 | 282 | 1.30 | 8.27 | 9.69 | 2.44 | 2.84 |
| 0 | (+32) | 3241 | 817 | 950 | 299 | 1.38 | 9.85 | 10.88 | 2.74 | 3.19 |

| 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] |
| -35 | (-31) | 724 | 182 | 212 | 163 | 0.75 | 2.14 | 4.47 | 1.13 | 1.31 |
| -30 | (-22) | 934 | 235 | 274 | 186 | 0.86 | 2.77 | 5.03 | 1.27 | 1.47 |
| -25 | (-13) | 1183 | 298 | 347 | 211 | 0.98 | 3.52 | 5.60 | 1.41 | 1.64 |
| -20 | (- 4) | 1475 | 372 | 432 | 238 | 1.10 | 4.40 | 6.19 | 1.56 | 1.81 |
| -15 | (+ 5) | 1811 | 456 | 531 | 265 | 1.22 | 5.42 | 6.82 | 1.72 | 2.00 |
| -10 | (+14) | 2196 | 553 | 644 | 291 | 1.35 | 6.61 | 7.51 | 1.89 | 2.20 |
| -5 | (+23) | 2632 | 663 | 771 | 317 | 1.47 | 7.96 | 8.29 | 2.09 | 2.43 |
| 0 | (+32) | 3122 | 787 | 915 | 341 | 1.58 | 9.49 | 9.18 | 2.31 | 2.69 |

E - PERFORMANCE - CURVES

| 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] |
| -35 | (-31) | 661 | 167 | 194 | 164 | 0.75 | 1.96 | 3.99 | 1.01 | 1.17 |
| -30 | (-22) | 871 | 220 | 255 | 191 | 0.88 | 2.58 | 4.56 | 1.15 | 1.34 |
| -25 | (-13) | 1118 | 282 | 328 | 221 | 1.02 | 3.32 | 5.08 | 1.28 | 1.49 |
| -20 | (- 4) | 1404 | 354 | 411 | 253 | 1.17 | 4.19 | 5.58 | 1.41 | 1.64 |
| -15 | (+ 5) | 1732 | 436 | 507 | 286 | 1.32 | 5.19 | 6.08 | 1.53 | 1.78 |
| -10 | (+14) | 2105 | 530 | 617 | 319 | 1.48 | 6.33 | 6.61 | 1.66 | 1.94 |
| -5 | (+23) | 2526 | 636 | 740 | 352 | 1.63 | 7.64 | 7.17 | 1.81 | 2.10 |
| 0 | (+32) | 2997 | 755 | 878 | 383 | 1.79 | 9.11 | 7.81 | 1.97 | 2.29 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-----------------|------|--------------------------|
| 1 Base plate | Universal EUEM | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 6.5 +0.12/-0.08 | [mm] | (0.256" +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 | | |