

COMPRESSOR DEFINITION

| | |
|---------------------------|--------------------|
| Designation | EM 2X3125U |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number | 513304075 |

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 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] |
| -35 | (-31) | 672 | 169 | 197 | 127 | 0.70 | 1.99 | 5.29 | 1.33 | 1.55 |
| -30 | (-22) | 853 | 215 | 250 | 141 | 0.75 | 2.53 | 6.04 | 1.52 | 1.77 |
| -25 | (-13) | 1073 | 270 | 314 | 156 | 0.81 | 3.19 | 6.89 | 1.74 | 2.02 |
| -20 | (- 4) | 1332 | 336 | 390 | 170 | 0.87 | 3.98 | 7.85 | 1.98 | 2.30 |
| -15 | (+ 5) | 1633 | 411 | 478 | 183 | 0.93 | 4.89 | 8.94 | 2.25 | 2.62 |
| -10 | (+14) | 1975 | 498 | 579 | 195 | 0.98 | 5.95 | 10.19 | 2.57 | 2.99 |
| -5 | (+23) | 2361 | 595 | 692 | 204 | 1.02 | 7.14 | 11.62 | 2.93 | 3.40 |
| 0 | (+32) | 2792 | 704 | 818 | 210 | 1.05 | 8.49 | 13.24 | 3.34 | 3.88 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V50Hz | | 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) | 630 | 159 | 185 | 133 | 0.72 | 1.86 | 4.75 | 1.20 | 1.39 |
| -30 | (-22) | 804 | 202 | 235 | 149 | 0.78 | 2.38 | 5.39 | 1.36 | 1.58 |
| -25 | (-13) | 1016 | 256 | 298 | 166 | 0.85 | 3.02 | 6.09 | 1.53 | 1.78 |
| -20 | (- 4) | 1267 | 319 | 371 | 183 | 0.92 | 3.78 | 6.87 | 1.73 | 2.01 |
| -15 | (+ 5) | 1560 | 393 | 457 | 201 | 1.00 | 4.67 | 7.74 | 1.95 | 2.27 |
| -10 | (+14) | 1895 | 477 | 555 | 217 | 1.07 | 5.70 | 8.73 | 2.20 | 2.56 |
| -5 | (+23) | 2273 | 573 | 666 | 231 | 1.14 | 6.87 | 9.87 | 2.49 | 2.89 |
| 0 | (+32) | 2696 | 679 | 790 | 242 | 1.19 | 8.19 | 11.17 | 2.81 | 3.27 |

| TEST CONDITIONS: @220V50Hz | | 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) | 589 | 148 | 173 | 138 | 0.74 | 1.74 | 4.29 | 1.08 | 1.26 |
| -30 | (-22) | 752 | 190 | 220 | 156 | 0.81 | 2.23 | 4.86 | 1.23 | 1.43 |
| -25 | (-13) | 954 | 240 | 280 | 175 | 0.89 | 2.84 | 5.46 | 1.38 | 1.60 |
| -20 | (- 4) | 1195 | 301 | 350 | 195 | 0.98 | 3.57 | 6.10 | 1.54 | 1.79 |
| -15 | (+ 5) | 1478 | 372 | 433 | 216 | 1.07 | 4.43 | 6.79 | 1.71 | 1.99 |
| -10 | (+14) | 1802 | 454 | 528 | 237 | 1.16 | 5.42 | 7.58 | 1.91 | 2.22 |
| -5 | (+23) | 2170 | 547 | 636 | 256 | 1.25 | 6.56 | 8.47 | 2.13 | 2.48 |
| 0 | (+32) | 2582 | 651 | 757 | 273 | 1.33 | 7.85 | 9.48 | 2.39 | 2.78 |

| TEST CONDITIONS: @220V50Hz | | 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) | 549 | 138 | 161 | 142 | 0.76 | 1.62 | 3.82 | 0.96 | 1.12 |
| -30 | (-22) | 700 | 176 | 205 | 161 | 0.83 | 2.08 | 4.37 | 1.10 | 1.28 |
| -25 | (-13) | 889 | 224 | 260 | 183 | 0.92 | 2.64 | 4.91 | 1.24 | 1.44 |
| -20 | (- 4) | 1117 | 282 | 327 | 206 | 1.03 | 3.33 | 5.45 | 1.37 | 1.60 |
| -15 | (+ 5) | 1387 | 350 | 406 | 231 | 1.14 | 4.15 | 6.02 | 1.52 | 1.77 |
| -10 | (+14) | 1698 | 428 | 498 | 255 | 1.25 | 5.11 | 6.64 | 1.67 | 1.95 |
| -5 | (+23) | 2053 | 517 | 602 | 280 | 1.36 | 6.21 | 7.33 | 1.85 | 2.15 |
| 0 | (+32) | 2453 | 618 | 719 | 302 | 1.46 | 7.45 | 8.11 | 2.04 | 2.38 |

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] |
| -35 | (-31) | 778 | 196 | 228 | 149 | 0.69 | 2.30 | 5.24 | 1.32 | 1.54 |
| -30 | (-22) | 1053 | 265 | 308 | 168 | 0.77 | 3.12 | 6.18 | 1.56 | 1.81 |
| -25 | (-13) | 1320 | 333 | 387 | 186 | 0.85 | 3.93 | 7.04 | 1.77 | 2.06 |
| -20 | (- 4) | 1601 | 404 | 469 | 203 | 0.93 | 4.78 | 7.90 | 1.99 | 2.32 |
| -15 | (+ 5) | 1919 | 484 | 562 | 219 | 1.01 | 5.75 | 8.84 | 2.23 | 2.59 |
| -10 | (+14) | 2294 | 578 | 672 | 233 | 1.08 | 6.90 | 9.94 | 2.51 | 2.91 |
| -5 | (+23) | 2749 | 693 | 806 | 245 | 1.14 | 8.32 | 11.27 | 2.84 | 3.30 |
| 0 | (+32) | 3306 | 833 | 969 | 255 | 1.19 | 10.05 | 12.91 | 3.25 | 3.78 |

| 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] |
| -35 | (-31) | 775 | 195 | 227 | 159 | 0.72 | 2.29 | 4.90 | 1.23 | 1.44 |
| -30 | (-22) | 1022 | 258 | 300 | 180 | 0.82 | 3.03 | 5.63 | 1.42 | 1.65 |
| -25 | (-13) | 1268 | 320 | 372 | 201 | 0.92 | 3.77 | 6.27 | 1.58 | 1.84 |
| -20 | (- 4) | 1533 | 386 | 449 | 222 | 1.02 | 4.57 | 6.90 | 1.74 | 2.02 |
| -15 | (+ 5) | 1840 | 464 | 539 | 243 | 1.12 | 5.51 | 7.58 | 1.91 | 2.22 |
| -10 | (+14) | 2211 | 557 | 648 | 263 | 1.22 | 6.65 | 8.41 | 2.12 | 2.46 |
| -5 | (+23) | 2666 | 672 | 781 | 282 | 1.31 | 8.06 | 9.45 | 2.38 | 2.77 |
| 0 | (+32) | 3229 | 814 | 946 | 301 | 1.39 | 9.82 | 10.78 | 2.72 | 3.16 |

| 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] |
| -35 | (-31) | 715 | 180 | 210 | 164 | 0.74 | 2.12 | 4.38 | 1.10 | 1.28 |
| -30 | (-22) | 935 | 236 | 274 | 187 | 0.85 | 2.77 | 4.99 | 1.26 | 1.46 |
| -25 | (-13) | 1159 | 292 | 340 | 211 | 0.97 | 3.45 | 5.49 | 1.38 | 1.61 |
| -20 | (- 4) | 1408 | 355 | 413 | 237 | 1.09 | 4.20 | 5.96 | 1.50 | 1.75 |
| -15 | (+ 5) | 1705 | 430 | 500 | 263 | 1.22 | 5.11 | 6.47 | 1.63 | 1.90 |
| -10 | (+14) | 2071 | 522 | 607 | 290 | 1.35 | 6.23 | 7.10 | 1.79 | 2.08 |
| -5 | (+23) | 2527 | 637 | 740 | 317 | 1.47 | 7.64 | 7.93 | 2.00 | 2.32 |
| 0 | (+32) | 3096 | 780 | 907 | 344 | 1.59 | 9.41 | 9.03 | 2.28 | 2.65 |

E - PERFORMANCE - CURVES

| 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) | 597 | 150 | 175 | 164 | 0.74 | 1.77 | 3.60 | 0.91 | 1.05 |
| -30 | (-22) | 790 | 199 | 231 | 190 | 0.87 | 2.34 | 4.16 | 1.05 | 1.22 |
| -25 | (-13) | 992 | 250 | 291 | 218 | 1.01 | 2.95 | 4.60 | 1.16 | 1.35 |
| -20 | (- 4) | 1226 | 309 | 359 | 248 | 1.16 | 3.65 | 4.99 | 1.26 | 1.46 |
| -15 | (+ 5) | 1512 | 381 | 443 | 280 | 1.32 | 4.53 | 5.41 | 1.36 | 1.58 |
| -10 | (+14) | 1873 | 472 | 549 | 314 | 1.48 | 5.63 | 5.93 | 1.49 | 1.74 |
| -5 | (+23) | 2330 | 587 | 683 | 349 | 1.64 | 7.05 | 6.63 | 1.67 | 1.94 |
| 0 | (+32) | 2906 | 732 | 851 | 385 | 1.80 | 8.83 | 7.58 | 1.91 | 2.22 |

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 | 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 30° up + 24° to Back | | |
| 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 | Slanted 45° up + 45° to Back | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |