

COMPRESSOR DEFINITION

| | |
|---------------------------|--------------------|
| Designation | EM X6144U |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number | 721FI52 |

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 | Medium Back Pressure (Commercial Compressors) | | |
| 4.1 Evaporating temperature range | -20°C to 10°C | (-4°F to 50°F) | |
| 5 Motor type | CSIR | | |
| 6 Starting torque | HST - High starting torque | | |
| 7 Expansion device | Capillary tube or Expansion valve | | |
| 8 Compressor cooling | Operating voltage range | | |
| | | 50 Hz | 60 Hz |
| 8.1 LBP (32°C Ambient temperature) | - | - | - |
| 8.2 LBP (43°C Ambient temperature) | - | - | - |
| 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 | 1/5 | [hp] |
| 2 Displacement | 4.53 | [cm ³] (0.276 cu.in) |
| 2.1 Bore [mm] | 19.000 | |
| 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 / ISO22 | |
| 4 Weight (with oil charge) | 7.65 | [kg] (16.87 lb.) |
| 5 Nitrogen charge | - | [kgf/cm ²] |

C - ELETRICAL DATA

| | | |
|--|---------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220-240 V 50-60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Current Relay | |
| 2.1 Starting device | MTRP-34 | |
| 3 Start capacitor | 53-64(330) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | OLP 4TM317KDBYY-153 | |
| 6 Start winding resistance | 15.23 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 15.03 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50/60 Hz) | 9.00/9.00 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz) | - | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50/60 Hz) | - | [A] - Measured according to UL 984 |
| 11 Approval boards certification | VDE | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|--|---------------------------|--------------------------------------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAEHBP46 Fan | | Evaporating temperature (Condensing temperature | | 7.2°C (44.96°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] |
| 2186 | 551 | 641 | 227 | 1.40 | 7.48 | 9.63 | 2.43 | 2.82 |

| | | | | | | | | |
|-------------------------------|----------|-----|-----------------------------|-------------------------------|--|---------------------------|--------------------------------------|-------|
| TEST CONDITIONS: @220V60Hz | | | ASHRAEHBP46 Fan | | Evaporating temperature (Condensing temperature | | 7.2°C (44.96°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] |
| 2616 | 659 | 767 | 292 | 1.54 | 8.95 | 8.97 | 2.26 | 2.63 |

E - PERFORMANCE - CURVES

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|-----------------|-----------------------------|---------------------------------------|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE46 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] |
| -20 (- 4) | 1033 | 260 | 303 | 138 | 1.10 | 2.92 | 7.47 | 1.88 | 2.19 |
| -15 (+ 5) | 1254 | 316 | 368 | 146 | 1.11 | 3.55 | 8.60 | 2.17 | 2.52 |
| -10 (+14) | 1523 | 384 | 446 | 152 | 1.14 | 4.33 | 10.02 | 2.53 | 2.94 |
| -5 (+23) | 1839 | 463 | 539 | 157 | 1.16 | 5.25 | 11.75 | 2.96 | 3.44 |
| 0 (+32) | 2202 | 555 | 645 | 160 | 1.19 | 6.33 | 13.80 | 3.48 | 4.04 |
| +5 (+41) | 2612 | 658 | 765 | 162 | 1.21 | 7.56 | 16.18 | 4.08 | 4.74 |
| +10 (+50) | 3070 | 774 | 900 | 162 | 1.21 | 8.95 | 18.89 | 4.76 | 5.54 |

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|-----------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE46 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] |
| -20 (- 4) | 901 | 227 | 264 | 149 | 1.15 | 2.75 | 6.08 | 1.53 | 1.78 |
| -15 (+ 5) | 1100 | 277 | 322 | 161 | 1.17 | 3.37 | 6.84 | 1.72 | 2.00 |
| -10 (+14) | 1340 | 338 | 393 | 171 | 1.20 | 4.12 | 7.80 | 1.96 | 2.28 |
| -5 (+23) | 1621 | 409 | 475 | 180 | 1.24 | 5.01 | 8.96 | 2.26 | 2.63 |
| 0 (+32) | 1944 | 490 | 570 | 187 | 1.27 | 6.05 | 10.35 | 2.61 | 3.03 |
| +5 (+41) | 2307 | 581 | 676 | 193 | 1.29 | 7.23 | 11.96 | 3.01 | 3.50 |
| +10 (+50) | 2711 | 683 | 794 | 197 | 1.30 | 8.56 | 13.81 | 3.48 | 4.05 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V50Hz | | ASHRAE46 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] |
| -20 | (- 4) | 774 | 195 | 227 | 159 | 1.18 | 2.58 | 4.84 | 1.22 | 1.42 |
| -15 | (+ 5) | 949 | 239 | 278 | 175 | 1.21 | 3.18 | 5.44 | 1.37 | 1.59 |
| -10 | (+14) | 1159 | 292 | 340 | 189 | 1.25 | 3.90 | 6.15 | 1.55 | 1.80 |
| -5 | (+23) | 1403 | 354 | 411 | 202 | 1.30 | 4.74 | 6.96 | 1.75 | 2.04 |
| 0 | (+32) | 1683 | 424 | 493 | 213 | 1.34 | 5.73 | 7.90 | 1.99 | 2.31 |
| +5 | (+41) | 1997 | 503 | 585 | 223 | 1.37 | 6.85 | 8.95 | 2.26 | 2.62 |
| +10 | (+50) | 2346 | 591 | 688 | 231 | 1.38 | 8.12 | 10.15 | 2.56 | 2.97 |

| TEST CONDITIONS: @220V60Hz | | ASHRAE46 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] |
| -20 | (- 4) | 1241 | 313 | 364 | 157 | 1.00 | 3.50 | 7.88 | 1.99 | 2.31 |
| -15 | (+ 5) | 1507 | 380 | 442 | 173 | 1.05 | 4.27 | 8.72 | 2.20 | 2.56 |
| -10 | (+14) | 1829 | 461 | 536 | 185 | 1.10 | 5.20 | 9.87 | 2.49 | 2.89 |
| -5 | (+23) | 2206 | 556 | 646 | 195 | 1.14 | 6.30 | 11.32 | 2.85 | 3.32 |
| 0 | (+32) | 2639 | 665 | 773 | 202 | 1.17 | 7.58 | 13.10 | 3.30 | 3.84 |
| +5 | (+41) | 3128 | 788 | 916 | 206 | 1.19 | 9.05 | 15.22 | 3.84 | 4.46 |
| +10 | (+50) | 3672 | 925 | 1076 | 207 | 1.19 | 10.70 | 17.68 | 4.46 | 5.18 |

| TEST CONDITIONS: @220V60Hz | | ASHRAE46 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] |
| -20 | (- 4) | 1089 | 274 | 319 | 171 | 1.05 | 3.32 | 6.42 | 1.62 | 1.88 |
| -15 | (+ 5) | 1332 | 336 | 390 | 189 | 1.12 | 4.08 | 7.05 | 1.78 | 2.07 |
| -10 | (+14) | 1623 | 409 | 476 | 206 | 1.18 | 4.99 | 7.86 | 1.98 | 2.30 |
| -5 | (+23) | 1962 | 494 | 575 | 220 | 1.24 | 6.07 | 8.85 | 2.23 | 2.59 |
| 0 | (+32) | 2350 | 592 | 688 | 233 | 1.29 | 7.31 | 10.05 | 2.53 | 2.94 |
| +5 | (+41) | 2785 | 702 | 816 | 243 | 1.34 | 8.73 | 11.46 | 2.89 | 3.36 |
| +10 | (+50) | 3269 | 824 | 958 | 251 | 1.37 | 10.32 | 13.09 | 3.30 | 3.84 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V60Hz | | ASHRAE46 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] |
| -20 | (- 4) | 937 | 236 | 275 | 183 | 1.09 | 3.12 | 5.07 | 1.28 | 1.49 |
| -15 | (+ 5) | 1155 | 291 | 338 | 205 | 1.17 | 3.87 | 5.66 | 1.43 | 1.66 |
| -10 | (+14) | 1413 | 356 | 414 | 225 | 1.26 | 4.75 | 6.30 | 1.59 | 1.85 |
| -5 | (+23) | 1712 | 431 | 502 | 245 | 1.34 | 5.79 | 7.01 | 1.77 | 2.05 |
| 0 | (+32) | 2051 | 517 | 601 | 263 | 1.41 | 6.98 | 7.80 | 1.97 | 2.29 |
| +5 | (+41) | 2431 | 613 | 712 | 280 | 1.48 | 8.34 | 8.67 | 2.19 | 2.54 |
| +10 | (+50) | 2852 | 719 | 836 | 295 | 1.55 | 9.87 | 9.65 | 2.43 | 2.83 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-------------------|------|--------------------------|
| 1 Base plate | European Standard | | |
| 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° | | |
| 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 | Straight | | |
| 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 46° | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |