**COMPRESSOR DEFINITION**

| | |
|---|---|
| Designation | **EM C3121U** |
| Nominal Voltage/Frequency | **220-240 V 50 Hz** |
| Engineering Number | **711IA72** |

**A - APPLICATION / LIMIT WORKING CONDITIONS**

| | | | |
|---|---|---|---|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-290 | | |
| 3 Nominal voltage and frequency | 220-240 / 50 | [ 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 Expantion device | Capillary tube | | |
| 8 Compressor cooling | | Operating voltage range | |
| | | 50 Hz | 60 Hz |
| 8.1 LBP (32ºC Ambient temperature) | - | - | - |
| 8.2 LBP (43ºC Ambient temperature) | - | - | - |
| 8.3 HBP (32ºC Ambient temperature) | - | - | - |
| 8.4 HBP (43ºC Ambient temperature) | - | - | - |
| 9 Maximum condensing temperature | | | |
| 9.1 Operating | 18.4 | [kgf/cm²] (262 psig) | / ºC - ºF |
| 9.2 Peak | 20.6 | [kgf/cm²] (293 psig) | / ºC - ºF |
| 10 Maximum winding temperature | 130 | [ °C ] | |

**B - MECHANICAL DATA**

| | | |
|---|---|---|
| 1 Commercial designation | 1/4 | [hp] |
| 2 Displacement | 5.54 | [cm³] (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) | 8.17 | [kg] (18.01 lb.) |
| 5 Nitrogen charge | - | [kgf/cm²] |

**C - ELETRICAL DATA**

| | | |
|---|---|---|
| 1 Nominal Voltage/Frequency/Number of Phases | 220-240 V 50 Hz 1 ~ (Single phase) | |
| 2 Starting device type | TSD | |
| 2.1 Starting device | TSD2-220V/TSD2-220V1.2/TSD2-D-220V | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 5(350) | [µF(VAC minimum)] |
| 5 Motor protection | 4TM276JDBYY | |
| 6 Start winding resistance | 13.50 | [Ω at 25ºC (77ºF)] +/- 8% |
| 7 Run winding resistance | 13.70 | [Ω at 25ºC (77ºF)] +/- 8% |
| 8 LRA - Locked rotor amperage (50 Hz) | - | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50 Hz) | - | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50 Hz) | - | [A] - Measured according to UL 984 |
| 11 Approval boards certification | VDE | |

## D - PERFORMANCE - CHECK POINT DATA

| TEST CONDITIONS: | | | **EN12900LBP** | | | Evaporating temperature | | **-35°C (-31°F)** |
|---|---|---|---|---|---|---|---|---|
| **@220V50Hz** | | | **Fan** | | | (Condensing temperature | | **40°C (104°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] |
| 549 | 138 | 161 | 101 | 0.49 | 1.84 | 5.42 | 1.37 | 1.59 |

## E - PERFORMANCE - CURVES

| TEST CONDITIONS: | | **EN12900** | | | | | (Condensing temperature **35ºC (+95ºF) )** | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **@220V50Hz** | | **Fan** | | | | | | | | |
| 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)** | 568 | 143 | 166 | 99 | 0.49 | 1.82 | 5.70 | 1.44 | 1.67 |
| **-30** | **(-22)** | 712 | 179 | 209 | 112 | 0.55 | 2.29 | 6.37 | 1.61 | 1.87 |
| **-25** | **(-13)** | 899 | 227 | 264 | 124 | 0.60 | 2.90 | 7.28 | 1.83 | 2.13 |
| **-20** | **(- 4)** | 1130 | 285 | 331 | 135 | 0.65 | 3.66 | 8.40 | 2.12 | 2.46 |
| **-15** | **(+ 5)** | 1403 | 354 | 411 | 145 | 0.69 | 4.57 | 9.71 | 2.45 | 2.85 |
| **-10** | **(+14)** | 1719 | 433 | 504 | 154 | 0.73 | 5.63 | 11.19 | 2.82 | 3.28 |
| **-5** | **(+23)** | 2077 | 524 | 609 | 162 | 0.77 | 6.86 | 12.81 | 3.23 | 3.75 |
| **0** | **(+32)** | 2479 | 625 | 726 | 170 | 0.80 | 8.25 | 14.56 | 3.67 | 4.27 |

| TEST CONDITIONS: | | **EN12900** | | | | | (Condensing temperature **45ºC (+113ºF) )** | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **@220V50Hz** | | **Fan** | | | | | | | | |
| 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)** | 474 | 120 | 139 | 110 | 0.50 | 1.67 | 4.39 | 1.11 | 1.29 |
| **-30** | **(-22)** | 601 | 152 | 176 | 121 | 0.56 | 2.12 | 4.98 | 1.25 | 1.46 |
| **-25** | **(-13)** | 765 | 193 | 224 | 133 | 0.63 | 2.71 | 5.72 | 1.44 | 1.68 |
| **-20** | **(- 4)** | 966 | 244 | 283 | 146 | 0.69 | 3.44 | 6.60 | 1.66 | 1.93 |
| **-15** | **(+ 5)** | 1205 | 304 | 353 | 158 | 0.76 | 4.31 | 7.58 | 1.91 | 2.22 |
| **-10** | **(+14)** | 1480 | 373 | 434 | 170 | 0.81 | 5.33 | 8.65 | 2.18 | 2.53 |
| **-5** | **(+23)** | 1792 | 451 | 525 | 183 | 0.87 | 6.50 | 9.78 | 2.46 | 2.87 |
| **0** | **(+32)** | 2140 | 539 | 627 | 196 | 0.93 | 7.83 | 10.95 | 2.76 | 3.21 |

| TEST CONDITIONS: | | **EN12900** | | | | | (Condensing temperature **55ºC (+131ºF) )** | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **@220V50Hz** | | **Fan** | | | | | | | | |
| 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)** | 386 | 97 | 113 | 120 | 0.50 | 1.50 | 3.17 | 0.80 | 0.93 |
| **-30** | **(-22)** | 497 | 125 | 146 | 131 | 0.58 | 1.95 | 3.79 | 0.96 | 1.11 |
| **-25** | **(-13)** | 639 | 161 | 187 | 143 | 0.66 | 2.52 | 4.48 | 1.13 | 1.31 |
| **-20** | **(- 4)** | 813 | 205 | 238 | 156 | 0.74 | 3.21 | 5.22 | 1.32 | 1.53 |
| **-15** | **(+ 5)** | 1018 | 256 | 298 | 170 | 0.82 | 4.05 | 5.99 | 1.51 | 1.75 |
| **-10** | **(+14)** | 1253 | 316 | 367 | 186 | 0.89 | 5.03 | 6.76 | 1.70 | 1.98 |
| **-5** | **(+23)** | 1520 | 383 | 445 | 203 | 0.97 | 6.15 | 7.51 | 1.89 | 2.20 |
| **0** | **(+32)** | 1817 | 458 | 533 | 221 | 1.04 | 7.42 | 8.22 | 2.07 | 2.41 |

## 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 42º 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 0° up + 45° to Back | | |
| 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 45° up + 45° to Back | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |