

COMPRESSOR DEFINITION

| | |
|---------------------------|-------------------|
| Designation | EM U40CLP |
| Nominal Voltage/Frequency | 220 V 50 Hz 60 Hz |
| Engineering Number | 513306135 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-600a | | |
| 3 Nominal voltage and frequency | 220 / 50 | [V / Hz] | |
| 4 Application type | Low Back Pressure | | |
| 4.1 Evaporating temperature range | -35°C to -10°C | (-31°F to 14°F) | |
| 5 Motor type | RSIR | | |
| 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 242 V | 198 to 242 V |
| 8.2 LBP (43°C Ambient temperature) | Static | 198 to 242 V | 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 | 6.9 | [kgf/cm ²] (98 psig) | / °C - °F |
| 9.2 Peak | 7.8 | [kgf/cm ²] (111 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|----------------|----------------------------------|
| 1 Commercial designation | 1/8 | [hp] |
| 2 Displacement | 5.96 | [cm ³] (0.364 cu.in) |
| 2.1 Bore [mm] | 22.500 | |
| 2.2 Stroke [mm] | 15.000 | |
| 3 Lubricant charge | 180 | [ml] (6.09 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO5 | |
| 4 Weight (with oil charge) | 6.43 | [kg] (14.18 lb.) |
| 5 Nitrogen charge | - | [kgf/cm ²] |

C - ELETRICAL DATA

| | | |
|--|-----------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220 V 50/60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | PTC | |
| 2.1 Starting device | MSC34X 220V | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | MSC34A31J3 | |
| 6 Start winding resistance | 24.50 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 32.30 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 8.52/7.66 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | 1.21/1.10 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | 1.33/1.24 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CE - IMTRO - TUV - UKCA | |

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] |
| 333 | 84 | 98 | 87 | 0.80 | 1.05 | 3.83 | 0.97 | 1.12 |

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| 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] |
| 388 | 98 | 114 | 85 | 0.67 | 1.22 | 4.58 | 1.15 | 1.34 |

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] | [W/W] |
| -35 (-31) | 209 | 53 | 61 | 67 | 0.78 | 0.65 | 3.10 | 0.78 | 0.91 |
| -30 (-22) | 285 | 72 | 84 | 74 | 0.79 | 0.89 | 3.82 | 0.96 | 1.12 |
| -25 (-13) | 375 | 94 | 110 | 81 | 0.79 | 1.18 | 4.63 | 1.17 | 1.36 |
| -20 (- 4) | 480 | 121 | 141 | 87 | 0.80 | 1.51 | 5.54 | 1.40 | 1.62 |
| -15 (+ 5) | 602 | 152 | 177 | 93 | 0.81 | 1.90 | 6.53 | 1.65 | 1.91 |
| -10 (+14) | 744 | 188 | 218 | 98 | 0.81 | 2.35 | 7.63 | 1.92 | 2.23 |

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|--------------------|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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) | 188 | 47 | 55 | 70 | 0.78 | 0.59 | 2.71 | 0.68 | 0.79 |
| -30 (-22) | 259 | 65 | 76 | 77 | 0.79 | 0.81 | 3.38 | 0.85 | 0.99 |
| -25 (-13) | 345 | 87 | 101 | 84 | 0.80 | 1.08 | 4.12 | 1.04 | 1.21 |
| -20 (- 4) | 448 | 113 | 131 | 91 | 0.81 | 1.41 | 4.92 | 1.24 | 1.44 |
| -15 (+ 5) | 569 | 143 | 167 | 98 | 0.82 | 1.79 | 5.79 | 1.46 | 1.70 |
| -10 (+14) | 710 | 179 | 208 | 105 | 0.83 | 2.24 | 6.73 | 1.70 | 1.97 |

E - PERFORMANCE - CURVES

| 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) | 162 | 41 | 47 | 70 | 0.78 | 0.51 | 2.32 | 0.59 | 0.68 | |
| -30 (-22) | 229 | 58 | 67 | 77 | 0.79 | 0.72 | 2.97 | 0.75 | 0.87 | |
| -25 (-13) | 311 | 78 | 91 | 85 | 0.80 | 0.98 | 3.65 | 0.92 | 1.07 | |
| -20 (- 4) | 411 | 104 | 121 | 94 | 0.81 | 1.29 | 4.38 | 1.10 | 1.28 | |
| -15 (+ 5) | 531 | 134 | 156 | 103 | 0.82 | 1.67 | 5.14 | 1.30 | 1.51 | |
| -10 (+14) | 672 | 169 | 197 | 113 | 0.84 | 2.12 | 5.96 | 1.50 | 1.75 | |

| 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) | 129 | 33 | 38 | 68 | 0.78 | 0.40 | 1.90 | 0.48 | 0.56 | |
| -30 (-22) | 192 | 48 | 56 | 76 | 0.79 | 0.60 | 2.54 | 0.64 | 0.75 | |
| -25 (-13) | 272 | 69 | 80 | 85 | 0.80 | 0.85 | 3.20 | 0.81 | 0.94 | |
| -20 (- 4) | 370 | 93 | 108 | 96 | 0.81 | 1.16 | 3.87 | 0.97 | 1.13 | |
| -15 (+ 5) | 489 | 123 | 143 | 107 | 0.83 | 1.54 | 4.56 | 1.15 | 1.34 | |
| -10 (+14) | 630 | 159 | 185 | 119 | 0.85 | 1.99 | 5.27 | 1.33 | 1.54 | |

| 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) | 254 | 64 | 74 | 63 | 0.64 | 0.80 | 4.05 | 1.02 | 1.19 | |
| -30 (-22) | 334 | 84 | 98 | 70 | 0.63 | 1.05 | 4.78 | 1.20 | 1.40 | |
| -25 (-13) | 429 | 108 | 126 | 77 | 0.63 | 1.35 | 5.60 | 1.41 | 1.64 | |
| -20 (- 4) | 545 | 137 | 160 | 84 | 0.63 | 1.71 | 6.50 | 1.64 | 1.90 | |
| -15 (+ 5) | 686 | 173 | 201 | 92 | 0.63 | 2.16 | 7.46 | 1.88 | 2.18 | |
| -10 (+14) | 857 | 216 | 251 | 101 | 0.63 | 2.70 | 8.47 | 2.13 | 2.48 | |

| 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) | 228 | 57 | 67 | 66 | 0.65 | 0.71 | 3.45 | 0.87 | 1.01 | |
| -30 (-22) | 308 | 78 | 90 | 75 | 0.64 | 0.97 | 4.12 | 1.04 | 1.21 | |
| -25 (-13) | 402 | 101 | 118 | 83 | 0.64 | 1.26 | 4.86 | 1.23 | 1.43 | |
| -20 (- 4) | 515 | 130 | 151 | 91 | 0.65 | 1.62 | 5.66 | 1.43 | 1.66 | |
| -15 (+ 5) | 651 | 164 | 191 | 100 | 0.66 | 2.05 | 6.51 | 1.64 | 1.91 | |
| -10 (+14) | 816 | 206 | 239 | 110 | 0.66 | 2.57 | 7.39 | 1.86 | 2.17 | |

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) | 197 | 50 | 58 | 64 | 0.68 | 0.62 | 3.06 | 0.77 | 0.90 |
| -30 | (-22) | 278 | 70 | 82 | 75 | 0.68 | 0.87 | 3.67 | 0.93 | 1.08 |
| -25 | (-13) | 372 | 94 | 109 | 86 | 0.69 | 1.17 | 4.34 | 1.09 | 1.27 |
| -20 | (- 4) | 482 | 121 | 141 | 96 | 0.70 | 1.51 | 5.05 | 1.27 | 1.48 |
| -15 | (+ 5) | 614 | 155 | 180 | 106 | 0.71 | 1.93 | 5.79 | 1.46 | 1.70 |
| -10 | (+14) | 773 | 195 | 226 | 118 | 0.72 | 2.44 | 6.55 | 1.65 | 1.92 |

| 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) | 161 | 41 | 47 | 58 | 0.75 | 0.50 | 2.79 | 0.70 | 0.82 |
| -30 | (-22) | 244 | 61 | 71 | 72 | 0.75 | 0.76 | 3.36 | 0.85 | 0.98 |
| -25 | (-13) | 337 | 85 | 99 | 85 | 0.76 | 1.06 | 3.96 | 1.00 | 1.16 |
| -20 | (- 4) | 445 | 112 | 131 | 97 | 0.78 | 1.40 | 4.58 | 1.15 | 1.34 |
| -15 | (+ 5) | 574 | 145 | 168 | 111 | 0.80 | 1.81 | 5.21 | 1.31 | 1.53 |
| -10 | (+14) | 727 | 183 | 213 | 125 | 0.82 | 2.30 | 5.84 | 1.47 | 1.71 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|------------------------------|------|--------------------------|
| 1 Base plate | New Base Plate 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 | | |