

COMPRESSOR DEFINITION

| | |
|---------------------------|-------------------|
| Designation | EM U40CLP |
| Nominal Voltage/Frequency | 220 V 50 Hz 60 Hz |
| Engineering Number | 513306175 |

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) | 8.6 | [kg] (18.96 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 | Combo | |
| 2.1 Starting device | 8EA17E62/8EA17E63/QPS2-C22MD3J6/QPS2-C22MD3J8 | |
| 3 Start capacitor | - | [μF(VAC minimum)] |
| 4 Run capacitor | - | [μF(VAC minimum)] |
| 5 Motor protection | 4TM189NFBYY-73 | |
| 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 - 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] |
| 346 | 87 | 101 | 89 | 0.80 | 1.09 | 3.90 | 0.98 | 1.14 |

| 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] |
| 408 | 103 | 120 | 89 | 0.67 | 1.28 | 4.57 | 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) | 208 | 53 | 61 | 68 | 0.78 | 0.65 | 3.08 | 0.78 | 0.90 |
| -30 | (-22) | 286 | 72 | 84 | 69 | 0.78 | 0.90 | 4.15 | 1.05 | 1.22 |
| -25 | (-13) | 376 | 95 | 110 | 69 | 0.78 | 1.18 | 5.41 | 1.36 | 1.58 |
| -20 | (- 4) | 481 | 121 | 141 | 70 | 0.78 | 1.51 | 6.90 | 1.74 | 2.02 |
| -15 | (+ 5) | 602 | 152 | 176 | 70 | 0.78 | 1.90 | 8.68 | 2.19 | 2.54 |
| -10 | (+14) | 743 | 187 | 218 | 69 | 0.78 | 2.34 | 10.80 | 2.72 | 3.16 |

| 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) | 190 | 48 | 56 | 80 | 0.79 | 0.59 | 2.39 | 0.60 | 0.70 |
| -30 | (-22) | 262 | 66 | 77 | 82 | 0.79 | 0.82 | 3.24 | 0.82 | 0.95 |
| -25 | (-13) | 348 | 88 | 102 | 83 | 0.79 | 1.09 | 4.22 | 1.06 | 1.24 |
| -20 | (- 4) | 450 | 113 | 132 | 84 | 0.79 | 1.41 | 5.36 | 1.35 | 1.57 |
| -15 | (+ 5) | 569 | 143 | 167 | 84 | 0.79 | 1.79 | 6.73 | 1.70 | 1.97 |
| -10 | (+14) | 709 | 179 | 208 | 85 | 0.79 | 2.24 | 8.38 | 2.11 | 2.46 |

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 | 93 | 0.81 | 0.51 | 1.72 | 0.43 | 0.50 | |
| -30 (-22) | 230 | 58 | 67 | 95 | 0.81 | 0.72 | 2.43 | 0.61 | 0.71 | |
| -25 (-13) | 313 | 79 | 92 | 98 | 0.81 | 0.98 | 3.20 | 0.81 | 0.94 | |
| -20 (- 4) | 412 | 104 | 121 | 100 | 0.82 | 1.29 | 4.07 | 1.03 | 1.19 | |
| -15 (+ 5) | 530 | 134 | 155 | 103 | 0.82 | 1.67 | 5.10 | 1.29 | 1.50 | |
| -10 (+14) | 670 | 169 | 196 | 105 | 0.82 | 2.12 | 6.35 | 1.60 | 1.86 | |

| 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) | 128 | 32 | 37 | 103 | 0.82 | 0.40 | 1.22 | 0.31 | 0.36 | |
| -30 (-22) | 192 | 48 | 56 | 107 | 0.83 | 0.60 | 1.86 | 0.47 | 0.55 | |
| -25 (-13) | 272 | 69 | 80 | 112 | 0.84 | 0.85 | 2.49 | 0.63 | 0.73 | |
| -20 (- 4) | 369 | 93 | 108 | 118 | 0.85 | 1.16 | 3.17 | 0.80 | 0.93 | |
| -15 (+ 5) | 488 | 123 | 143 | 123 | 0.86 | 1.54 | 3.94 | 0.99 | 1.15 | |
| -10 (+14) | 629 | 158 | 184 | 128 | 0.87 | 1.98 | 4.86 | 1.22 | 1.42 | |

| 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) | 253 | 64 | 74 | 63 | 0.63 | 0.79 | 4.01 | 1.01 | 1.17 | |
| -30 (-22) | 333 | 84 | 97 | 70 | 0.63 | 1.04 | 4.80 | 1.21 | 1.41 | |
| -25 (-13) | 428 | 108 | 125 | 76 | 0.63 | 1.34 | 5.60 | 1.41 | 1.64 | |
| -20 (- 4) | 544 | 137 | 159 | 84 | 0.63 | 1.71 | 6.46 | 1.63 | 1.89 | |
| -15 (+ 5) | 685 | 173 | 201 | 92 | 0.63 | 2.16 | 7.38 | 1.86 | 2.16 | |
| -10 (+14) | 857 | 216 | 251 | 102 | 0.62 | 2.70 | 8.40 | 2.12 | 2.46 | |

| 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) | 229 | 58 | 67 | 65 | 0.65 | 0.72 | 3.48 | 0.88 | 1.02 | |
| -30 (-22) | 309 | 78 | 90 | 73 | 0.66 | 0.97 | 4.23 | 1.07 | 1.24 | |
| -25 (-13) | 403 | 102 | 118 | 81 | 0.66 | 1.26 | 4.96 | 1.25 | 1.45 | |
| -20 (- 4) | 516 | 130 | 151 | 90 | 0.66 | 1.62 | 5.71 | 1.44 | 1.67 | |
| -15 (+ 5) | 652 | 164 | 191 | 100 | 0.66 | 2.05 | 6.51 | 1.64 | 1.91 | |
| -10 (+14) | 817 | 206 | 239 | 110 | 0.66 | 2.58 | 7.37 | 1.86 | 2.16 | |

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) | 196 | 49 | 57 | 64 | 0.69 | 0.61 | 3.09 | 0.78 | 0.90 |
| -30 | (-22) | 277 | 70 | 81 | 73 | 0.70 | 0.87 | 3.80 | 0.96 | 1.11 |
| -25 | (-13) | 370 | 93 | 109 | 83 | 0.71 | 1.16 | 4.48 | 1.13 | 1.31 |
| -20 | (- 4) | 481 | 121 | 141 | 94 | 0.71 | 1.51 | 5.14 | 1.30 | 1.51 |
| -15 | (+ 5) | 613 | 154 | 180 | 106 | 0.72 | 1.93 | 5.82 | 1.47 | 1.70 |
| -10 | (+14) | 772 | 194 | 226 | 118 | 0.73 | 2.43 | 6.53 | 1.65 | 1.91 |

| 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 | 0.74 | 0.50 | 2.72 | 0.69 | 0.80 |
| -30 | (-22) | 244 | 61 | 71 | 70 | 0.76 | 0.76 | 3.42 | 0.86 | 1.00 |
| -25 | (-13) | 337 | 85 | 99 | 83 | 0.77 | 1.06 | 4.05 | 1.02 | 1.19 |
| -20 | (- 4) | 445 | 112 | 130 | 96 | 0.79 | 1.40 | 4.64 | 1.17 | 1.36 |
| -15 | (+ 5) | 574 | 145 | 168 | 110 | 0.80 | 1.81 | 5.22 | 1.32 | 1.53 |
| -10 | (+14) | 727 | 183 | 213 | 125 | 0.81 | 2.29 | 5.80 | 1.46 | 1.70 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|------------------------------|------|--------------------------|
| 1 Base plate | New Base Plate EUEM | | |
| 2 Tray holder | Yes | | |
| 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 | | |