

COMPRESSOR DEFINITION

| | |
|---------------------------|--------------------|
| Designation | EM U30HER |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number | 513308060 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-134a | | |
| 3 Nominal voltage and frequency | 220-240 / 50-60 | [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-CSIR | | |
| 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 | 187 to 255 V | 187 to 242 V |
| 8.2 LBP (43°C Ambient temperature) | Static | 187 to 255 V | 187 to 242 V |
| 8.3 HBP (32°C Ambient temperature) | - | - | - |
| 8.4 HBP (43°C Ambient temperature) | - | - | - |
| 9 Maximum condensing temperature | | | |
| 9.1 Operating | 14.2 | [kgf/cm ²] (202 psig) | / °C - °F |
| 9.2 Peak | 15.9 | [kgf/cm ²] (226 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|---------------|--|
| 1 Commercial designation | 1/10 | [hp] |
| 2 Displacement | 3.00 | [cm ³] (0.183 cu.in) |
| 2.1 Bore [mm] | 19.000 | |
| 2.2 Stroke [mm] | 10.600 | |
| 3 Lubricant charge | 170 | [ml] (5.75 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 | |
| 4 Weight (with oil charge) | 7.65 | [kg] (16.87 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 | Current Relay | |
| 2.1 Starting device | 213514016 | |
| 3 Start capacitor | - | [μF(VAC minimum)] |
| 4 Run capacitor | - | [μF(VAC minimum)] |
| 5 Motor protection | 4TM718KFBYY-53 | |
| 6 Start winding resistance | 39.10 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 24.60 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50/60 Hz) | 8.20/7.90 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz) | 0.76/0.68 | [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 | TUV | |

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] |
| 275 | 69 | 81 | 65 | 0.55 | 1.56 | 4.23 | 1.07 | 1.24 |

| | | | | | | | | |
|--------------------------------------|----------|-----|-------------------------------------|-------------------------------|--|--|-----------|-------|
| 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] |
| 323 | 81 | 95 | 70 | 0.50 | 1.84 | 4.63 | 1.17 | 1.36 |

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) | 148 | 37 | 43 | 48 | 0.51 | 0.84 | 3.11 | 0.78 | 0.91 |
| -30 (-22) | 210 | 53 | 62 | 54 | 0.53 | 1.19 | 3.88 | 0.98 | 1.14 |
| -25 (-13) | 286 | 72 | 84 | 62 | 0.54 | 1.62 | 4.64 | 1.17 | 1.36 |
| -20 (- 4) | 376 | 95 | 110 | 69 | 0.56 | 2.14 | 5.45 | 1.37 | 1.60 |
| -15 (+ 5) | 485 | 122 | 142 | 76 | 0.58 | 2.77 | 6.33 | 1.60 | 1.85 |
| -10 (+14) | 614 | 155 | 180 | 84 | 0.60 | 3.52 | 7.31 | 1.84 | 2.14 |

| | | | | | | | | | |
|--------------------------------------|----------------------------|----------|----------------------------------|-----------------------------|--|-------------------------|---------------------------|-----------|-------|
| 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) | 106 | 27 | 31 | 45 | 0.51 | 0.60 | 2.36 | 0.59 | 0.69 |
| -30 (-22) | 169 | 43 | 50 | 53 | 0.53 | 0.96 | 3.17 | 0.80 | 0.93 |
| -25 (-13) | 244 | 62 | 72 | 62 | 0.55 | 1.39 | 3.94 | 0.99 | 1.15 |
| -20 (- 4) | 334 | 84 | 98 | 71 | 0.57 | 1.90 | 4.70 | 1.19 | 1.38 |
| -15 (+ 5) | 441 | 111 | 129 | 80 | 0.59 | 2.52 | 5.49 | 1.38 | 1.61 |
| -10 (+14) | 567 | 143 | 166 | 89 | 0.62 | 3.25 | 6.33 | 1.59 | 1.85 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: | | ASHRAE32 | | | (Condensing temperature 65°C (+149°F)) | | | | | |
|-------------------------|------------------|----------|-----|-------------------|--|---------------|-----------------|-----------|-------|--|
| @220V50Hz | | Static | | | | | | | | |
| Evaporating temperature | Cooling capacity | | | Power consumption | Current consumption | Gas flow rate | EFFICIENCY RATE | | | |
| | +/- 5% | | | +/- 5% | +/- 5% | +/- 5% | +/- 7% | | | |
| °C (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| -35 (-31) | 76 | 19 | 22 | 42 | 0.50 | 0.43 | 1.79 | 0.45 | 0.52 | |
| -30 (-22) | 138 | 35 | 41 | 52 | 0.52 | 0.78 | 2.66 | 0.67 | 0.78 | |
| -25 (-13) | 211 | 53 | 62 | 61 | 0.54 | 1.20 | 3.44 | 0.87 | 1.01 | |
| -20 (- 4) | 297 | 75 | 87 | 72 | 0.56 | 1.69 | 4.17 | 1.05 | 1.22 | |
| -15 (+ 5) | 399 | 101 | 117 | 83 | 0.59 | 2.28 | 4.86 | 1.23 | 1.43 | |
| -10 (+14) | 521 | 131 | 153 | 94 | 0.63 | 2.98 | 5.57 | 1.40 | 1.63 | |

| TEST CONDITIONS: | | ASHRAE32 | | | (Condensing temperature 45°C (+113°F)) | | | | | |
|-------------------------|------------------|----------|-----|-------------------|--|---------------|-----------------|-----------|-------|--|
| @220V60Hz | | Static | | | | | | | | |
| Evaporating temperature | Cooling capacity | | | Power consumption | Current consumption | Gas flow rate | EFFICIENCY RATE | | | |
| | +/- 5% | | | +/- 5% | +/- 5% | +/- 5% | +/- 7% | | | |
| °C (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| -35 (-31) | 182 | 46 | 53 | 53 | 0.45 | 1.03 | 3.41 | 0.86 | 1.00 | |
| -30 (-22) | 260 | 65 | 76 | 63 | 0.48 | 1.47 | 4.14 | 1.04 | 1.21 | |
| -25 (-13) | 351 | 88 | 103 | 72 | 0.51 | 1.99 | 4.89 | 1.23 | 1.43 | |
| -20 (- 4) | 458 | 115 | 134 | 81 | 0.54 | 2.61 | 5.65 | 1.42 | 1.66 | |
| -15 (+ 5) | 584 | 147 | 171 | 91 | 0.58 | 3.33 | 6.46 | 1.63 | 1.89 | |
| -10 (+14) | 730 | 184 | 214 | 100 | 0.62 | 4.18 | 7.32 | 1.84 | 2.15 | |

| TEST CONDITIONS: | | ASHRAE32 | | | (Condensing temperature 55°C (+131°F)) | | | | | |
|-------------------------|------------------|----------|-----|-------------------|--|---------------|-----------------|-----------|-------|--|
| @220V60Hz | | Static | | | | | | | | |
| Evaporating temperature | Cooling capacity | | | Power consumption | Current consumption | Gas flow rate | EFFICIENCY RATE | | | |
| | +/- 5% | | | +/- 5% | +/- 5% | +/- 5% | +/- 7% | | | |
| °C (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| -35 (-31) | 142 | 36 | 42 | 51 | 0.44 | 0.80 | 2.78 | 0.70 | 0.82 | |
| -30 (-22) | 218 | 55 | 64 | 62 | 0.47 | 1.24 | 3.53 | 0.89 | 1.03 | |
| -25 (-13) | 308 | 78 | 90 | 72 | 0.51 | 1.75 | 4.25 | 1.07 | 1.24 | |
| -20 (- 4) | 414 | 104 | 121 | 83 | 0.55 | 2.36 | 4.95 | 1.25 | 1.45 | |
| -15 (+ 5) | 537 | 135 | 157 | 95 | 0.59 | 3.07 | 5.67 | 1.43 | 1.66 | |
| -10 (+14) | 681 | 172 | 200 | 106 | 0.64 | 3.90 | 6.40 | 1.61 | 1.88 | |

| TEST CONDITIONS: | | ASHRAE32 | | | (Condensing temperature 65°C (+149°F)) | | | | | |
|-------------------------|------------------|----------|-----|-------------------|--|---------------|-----------------|-----------|-------|--|
| @220V60Hz | | Static | | | | | | | | |
| Evaporating temperature | Cooling capacity | | | Power consumption | Current consumption | Gas flow rate | EFFICIENCY RATE | | | |
| | +/- 5% | | | +/- 5% | +/- 5% | +/- 5% | +/- 7% | | | |
| °C (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| -35 (-31) | 108 | 27 | 32 | 47 | 0.44 | 0.61 | 2.33 | 0.59 | 0.68 | |
| -30 (-22) | 181 | 45 | 53 | 59 | 0.47 | 1.02 | 3.06 | 0.77 | 0.90 | |
| -25 (-13) | 266 | 67 | 78 | 71 | 0.51 | 1.51 | 3.73 | 0.94 | 1.09 | |
| -20 (- 4) | 366 | 92 | 107 | 84 | 0.55 | 2.08 | 4.35 | 1.10 | 1.28 | |
| -15 (+ 5) | 484 | 122 | 142 | 98 | 0.61 | 2.76 | 4.95 | 1.25 | 1.45 | |
| -10 (+14) | 622 | 157 | 182 | 112 | 0.67 | 3.56 | 5.53 | 1.39 | 1.62 | |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-------------------------------|------|--------------------------|
| 1 Base plate | Universal EG/F/AMEM version 2 | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 8.2 +0.12/-0.08 | [mm] | (0.323" +0.005"/-0.003") |
| 3.1.1 Material | Copper | | |
| 3.1.2 Shape | Straight | | |
| 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 | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.3.1 Material | Copper | | |
| 3.3.2 Shape | Straight | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |