

COMPRESSOR DEFINITION

| | |
|---------------------------|--------------------|
| Designation | EM I70UER |
| Nominal Voltage/Frequency | 220-240 V 50-60 Hz |
| Engineering Number | 513307348 |

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 | Low-Medium Back Pressure | | |
| 4.1 Evaporating temperature range | -35°C to -5°C | (-31°F to 23°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) | Fan | 198 to 255 V | 198 to 255 V |
| 8.2 LBP (43°C Ambient temperature) | Fan | 198 to 255 V | 198 to 255 V |
| 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 | 4.08 | [cm ³] (0.249 cu.in) |
| 2.1 Bore [mm] | 19.000 | |
| 2.2 Stroke [mm] | 14.400 | |
| 3 Lubricant charge | 160 | [ml] (5.41 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO32 | |
| 4 Weight (with oil charge) | 8.09 | [kg] (17.84 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 | 213514130/213515004 | |
| 3 Start capacitor | 88-108(140) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | 4TM734KDBYY-53 | |
| 6 Start winding resistance | 41.67 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 18.25 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50/60 Hz) | 9.70/9.40 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz) | 1.35/1.13 | [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 | CCC - CE - TUV - UKCA - VDE | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|----------------------------------------------------|---------------------------|----------------------------------------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAELBP32 Fan | | 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] |
| 605 | 152 | 177 | 150 | 1.16 | 1.80 | 4.03 | 1.02 | 1.18 |

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|----------------------------------------------------|---------------------------|----------------------------------------|-------|
| TEST CONDITIONS: @220V60Hz | | | ASHRAELBP32 Fan | | 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] |
| 717 | 181 | 210 | 161 | 1.03 | 2.13 | 4.45 | 1.12 | 1.30 |

E - PERFORMANCE - CURVES

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|-----------------|--------------------------------|---------------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 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] |
| -35 (-31) | 383 | 97 | 112 | 110 | 1.10 | 1.13 | 3.48 | 0.88 | 1.02 |
| -30 (-22) | 483 | 122 | 141 | 120 | 1.12 | 1.43 | 4.03 | 1.02 | 1.18 |
| -25 (-13) | 603 | 152 | 177 | 128 | 1.13 | 1.79 | 4.72 | 1.19 | 1.38 |
| -20 (- 4) | 747 | 188 | 219 | 135 | 1.15 | 2.23 | 5.55 | 1.40 | 1.63 |
| -15 (+ 5) | 920 | 232 | 270 | 141 | 1.16 | 2.76 | 6.52 | 1.64 | 1.91 |
| -10 (+14) | 1125 | 283 | 330 | 148 | 1.17 | 3.39 | 7.61 | 1.92 | 2.23 |
| -5 (+23) | 1366 | 344 | 400 | 155 | 1.18 | 4.13 | 8.82 | 2.22 | 2.59 |

| | | | | | | | | | |
|-------------------------------|----------------------------|----------|-----------------|--------------------------------|----------------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @220V50Hz | | | ASHRAE32 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] |
| -35 (-31) | 365 | 92 | 107 | 116 | 1.11 | 1.08 | 3.16 | 0.80 | 0.92 |
| -30 (-22) | 467 | 118 | 137 | 128 | 1.13 | 1.39 | 3.65 | 0.92 | 1.07 |
| -25 (-13) | 587 | 148 | 172 | 138 | 1.15 | 1.75 | 4.25 | 1.07 | 1.25 |
| -20 (- 4) | 728 | 184 | 213 | 147 | 1.16 | 2.17 | 4.96 | 1.25 | 1.45 |
| -15 (+ 5) | 895 | 226 | 262 | 155 | 1.18 | 2.68 | 5.76 | 1.45 | 1.69 |
| -10 (+14) | 1091 | 275 | 320 | 164 | 1.20 | 3.28 | 6.65 | 1.68 | 1.95 |
| -5 (+23) | 1320 | 333 | 387 | 173 | 1.22 | 3.99 | 7.64 | 1.93 | 2.24 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V50Hz | | ASHRAE32 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] |
| -35 (-31) | 331 | 83 | 97 | 119 | 1.11 | 0.98 | 2.79 | 0.70 | 0.82 | |
| -30 (-22) | 436 | 110 | 128 | 134 | 1.14 | 1.29 | 3.25 | 0.82 | 0.95 | |
| -25 (-13) | 555 | 140 | 163 | 147 | 1.16 | 1.65 | 3.78 | 0.95 | 1.11 | |
| -20 (- 4) | 692 | 175 | 203 | 158 | 1.18 | 2.07 | 4.38 | 1.10 | 1.28 | |
| -15 (+ 5) | 852 | 215 | 250 | 169 | 1.21 | 2.55 | 5.04 | 1.27 | 1.48 | |
| -10 (+14) | 1038 | 262 | 304 | 180 | 1.24 | 3.12 | 5.76 | 1.45 | 1.69 | |
| -5 (+23) | 1255 | 316 | 368 | 192 | 1.27 | 3.79 | 6.53 | 1.65 | 1.91 | |

| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Fan | | | (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) | 282 | 71 | 83 | 119 | 1.11 | 0.83 | 2.37 | 0.60 | 0.69 | |
| -30 (-22) | 388 | 98 | 114 | 137 | 1.14 | 1.15 | 2.81 | 0.71 | 0.82 | |
| -25 (-13) | 506 | 127 | 148 | 154 | 1.17 | 1.50 | 3.29 | 0.83 | 0.96 | |
| -20 (- 4) | 639 | 161 | 187 | 168 | 1.20 | 1.90 | 3.80 | 0.96 | 1.11 | |
| -15 (+ 5) | 791 | 199 | 232 | 183 | 1.24 | 2.37 | 4.34 | 1.09 | 1.27 | |
| -10 (+14) | 966 | 244 | 283 | 197 | 1.28 | 2.91 | 4.91 | 1.24 | 1.44 | |
| -5 (+23) | 1169 | 295 | 343 | 213 | 1.33 | 3.53 | 5.49 | 1.38 | 1.61 | |

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 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] |
| -35 (-31) | 458 | 115 | 134 | 114 | 0.75 | 1.08 | 3.99 | 1.01 | 1.17 | |
| -30 (-22) | 607 | 153 | 178 | 129 | 0.83 | 1.77 | 4.71 | 1.19 | 1.38 | |
| -25 (-13) | 786 | 198 | 230 | 143 | 0.93 | 2.76 | 5.49 | 1.38 | 1.61 | |
| -20 (- 4) | 995 | 251 | 292 | 158 | 1.02 | 3.55 | 6.34 | 1.60 | 1.86 | |
| -15 (+ 5) | 1231 | 310 | 361 | 171 | 1.11 | 3.66 | 7.27 | 1.83 | 2.13 | |
| -10 (+14) | 1494 | 377 | 438 | 182 | 1.18 | 2.61 | 8.28 | 2.09 | 2.43 | |
| -5 (+23) | 1782 | 449 | 522 | 189 | 1.23 | - 0.11 | 9.38 | 2.36 | 2.75 | |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 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] |
| -35 | (-31) | 410 | 103 | 120 | 117 | 0.76 | 1.28 | 3.53 | 0.89 | 1.03 |
| -30 | (-22) | 548 | 138 | 160 | 131 | 0.85 | 1.53 | 4.16 | 1.05 | 1.22 |
| -25 | (-13) | 720 | 181 | 211 | 148 | 0.96 | 2.25 | 4.83 | 1.22 | 1.42 |
| -20 | (- 4) | 925 | 233 | 271 | 166 | 1.07 | 2.96 | 5.54 | 1.40 | 1.62 |
| -15 | (+ 5) | 1163 | 293 | 341 | 184 | 1.19 | 3.17 | 6.30 | 1.59 | 1.85 |
| -10 | (+14) | 1431 | 361 | 419 | 202 | 1.31 | 2.39 | 7.10 | 1.79 | 2.08 |
| -5 | (+23) | 1728 | 435 | 506 | 217 | 1.41 | 0.13 | 7.97 | 2.01 | 2.33 |

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 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] |
| -35 | (-31) | 361 | 91 | 106 | 117 | 0.76 | 1.36 | 3.11 | 0.78 | 0.91 |
| -30 | (-22) | 485 | 122 | 142 | 132 | 0.86 | 1.20 | 3.70 | 0.93 | 1.08 |
| -25 | (-13) | 647 | 163 | 190 | 151 | 0.98 | 1.70 | 4.30 | 1.08 | 1.26 |
| -20 | (- 4) | 846 | 213 | 248 | 172 | 1.11 | 2.36 | 4.90 | 1.24 | 1.44 |
| -15 | (+ 5) | 1081 | 273 | 317 | 195 | 1.27 | 2.70 | 5.53 | 1.39 | 1.62 |
| -10 | (+14) | 1351 | 341 | 396 | 219 | 1.42 | 2.24 | 6.18 | 1.56 | 1.81 |
| -5 | (+23) | 1655 | 417 | 485 | 242 | 1.57 | 0.47 | 6.85 | 1.73 | 2.01 |

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 Fan | | | (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) | 300 | 76 | 88 | 114 | 0.74 | - 0.07 | 2.60 | 0.66 | 0.76 |
| -30 | (-22) | 406 | 102 | 119 | 129 | 0.83 | - 0.60 | 3.20 | 0.81 | 0.94 |
| -25 | (-13) | 555 | 140 | 163 | 149 | 0.96 | - 0.30 | 3.77 | 0.95 | 1.10 |
| -20 | (- 4) | 745 | 188 | 218 | 173 | 1.12 | 0.35 | 4.32 | 1.09 | 1.27 |
| -15 | (+ 5) | 975 | 246 | 286 | 200 | 1.30 | 0.86 | 4.86 | 1.23 | 1.43 |
| -10 | (+14) | 1243 | 313 | 364 | 230 | 1.50 | 0.74 | 5.40 | 1.36 | 1.58 |
| -5 | (+23) | 1549 | 390 | 454 | 261 | 1.70 | - 0.49 | 5.93 | 1.49 | 1.74 |

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 | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.2.1 Material | Copper | | |
| 3.2.2 Shape | Slanted | | |
| 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 | | |