

COMPRESSOR DEFINITION

| | |
|---------------------------|-------------|
| Designation | EM CS60CLC |
| Nominal Voltage/Frequency | 220 V 60 Hz |
| Engineering Number | 513301906 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-600a | | |
| 3 Nominal voltage and frequency | 220 / 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 | RSCR | | |
| 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 |
| 8.2 LBP (43°C Ambient temperature) | Static | - | 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 | 0.13 | [hp] |
| 2 Displacement | 9.04 | [cm ³] (0.552 cu.in) |
| 2.1 Bore [mm] | 24.000 | |
| 2.2 Stroke [mm] | 20.000 | |
| 3 Lubricant charge | 150 | [ml] (5.07 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO5 | |
| 4 Weight (with oil charge) | 7.5 | [kg] (16.53 lb.) |
| 5 Nitrogen charge | - | [kgf/cm ²] |

C - ELETRICAL DATA

| | | |
|--|--|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220 V 60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Combo | |
| 2.1 Starting device | 8EA17C3/8EA17E63/8EA17E64/QPS2-C22MD3107 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 5(350) | [µF(VAC minimum)] |
| 5 Motor protection | DRB21N61A2 | |
| 6 Start winding resistance | 17.86 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 27.22 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 3.81 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | 0.56 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | - | [A] - Measured according to UL 984 |
| 11 Approval boards certification | | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| 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] |
| 649 | 163 | 190 | 103 | 0.49 | 2.04 | 6.27 | 1.58 | 1.84 |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|---------------------------------------|----------------------------|---------------------------|-----------|-------|
| 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) | 377 | 95 | 111 | 69 | 0.35 | 1.18 | 5.43 | 1.37 | 1.59 |
| -30 | (-22) | 503 | 127 | 147 | 80 | 0.39 | 1.58 | 6.30 | 1.59 | 1.85 |
| -25 | (-13) | 649 | 164 | 190 | 90 | 0.43 | 2.04 | 7.27 | 1.83 | 2.13 |
| -20 | (- 4) | 825 | 208 | 242 | 99 | 0.47 | 2.59 | 8.32 | 2.10 | 2.44 |
| -15 | (+ 5) | 1038 | 262 | 304 | 109 | 0.52 | 3.27 | 9.48 | 2.39 | 2.78 |
| -10 | (+14) | 1298 | 327 | 380 | 120 | 0.57 | 4.09 | 10.76 | 2.71 | 3.15 |

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|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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) | 363 | 92 | 106 | 72 | 0.36 | 1.14 | 5.04 | 1.27 | 1.48 |
| -30 | (-22) | 486 | 122 | 142 | 84 | 0.40 | 1.52 | 5.80 | 1.46 | 1.70 |
| -25 | (-13) | 627 | 158 | 184 | 95 | 0.45 | 1.97 | 6.60 | 1.66 | 1.93 |
| -20 | (- 4) | 795 | 200 | 233 | 107 | 0.50 | 2.50 | 7.45 | 1.88 | 2.18 |
| -15 | (+ 5) | 999 | 252 | 293 | 119 | 0.56 | 3.14 | 8.37 | 2.11 | 2.45 |
| -10 | (+14) | 1246 | 314 | 365 | 133 | 0.62 | 3.93 | 9.36 | 2.36 | 2.74 |

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|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|--|----------------------------|---------------------------|-----------|-------|
| 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) | 336 | 85 | 98 | 74 | 0.37 | 1.05 | 4.57 | 1.15 | 1.34 |
| -30 | (-22) | 458 | 115 | 134 | 87 | 0.42 | 1.44 | 5.27 | 1.33 | 1.54 |
| -25 | (-13) | 596 | 150 | 175 | 100 | 0.48 | 1.87 | 5.98 | 1.51 | 1.75 |
| -20 | (- 4) | 758 | 191 | 222 | 113 | 0.54 | 2.38 | 6.70 | 1.69 | 1.96 |
| -15 | (+ 5) | 953 | 240 | 279 | 128 | 0.60 | 3.00 | 7.44 | 1.87 | 2.18 |
| -10 | (+14) | 1190 | 300 | 349 | 145 | 0.67 | 3.76 | 8.21 | 2.07 | 2.41 |

E - PERFORMANCE - CURVES

| 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) | 296 | 75 | 87 | 75 | 0.38 | 0.93 | 3.95 | 1.00 | 1.16 |
| -30 | (-22) | 419 | 105 | 123 | 89 | 0.44 | 1.31 | 4.67 | 1.18 | 1.37 |
| -25 | (-13) | 555 | 140 | 163 | 103 | 0.50 | 1.74 | 5.35 | 1.35 | 1.57 |
| -20 | (- 4) | 713 | 180 | 209 | 119 | 0.57 | 2.24 | 6.01 | 1.51 | 1.76 |
| -15 | (+ 5) | 901 | 227 | 264 | 136 | 0.65 | 2.84 | 6.65 | 1.68 | 1.95 |
| -10 | (+14) | 1129 | 285 | 331 | 155 | 0.73 | 3.56 | 7.28 | 1.84 | 2.13 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|--------------------------------|------|--------------------------|
| 1 Base plate | European Standard EUEM | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 7.6 +0.05/-0.05 | [mm] | (0.299" +0.002"/-0.002") |
| 3.1.1 Material | Copper(OD) | | |
| 3.1.2 Shape | Slanted parallel to Base Plate | | |
| 3.2 DISCHARGE | 4.25 +0.05/-0.05 | [mm] | (0.167" +0.002"/-0.002") |
| 3.2.1 Material | Copper | | |
| 3.2.2 Shape | Straight | | |
| 3.3 PROCESS | 6.35 +0.08/-0.08 | [mm] | (0.250" +0.003"/-0.003") |
| 3.3.1 Material | Copper(OD) | | |
| 3.3.2 Shape | Slanted 45° up | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |