

COMPRESSOR DEFINITION

| | |
|---------------------------|----------------|
| Designation | EM 65HHR |
| Nominal Voltage/Frequency | 220 V 50-60 Hz |
| Engineering Number | 513307457 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-134a | | |
| 3 Nominal voltage and frequency | 220 / 50-60 | [V / Hz] | |
| 4 Application type | Midium-High Back Pressure | | |
| 4.1 Evaporating temperature range | -10°C to 15°C | (14°F to 59°F) | |
| 5 Motor type | RSIR-CSIR | | |
| 6 Starting torque | LST - Low Starting Torque | | |
| 7 Expantion device | Capillary tube | | |
| 8 Compressor cooling | | Operating voltage range | |
| | | 50 Hz | 60 Hz |
| 8.1 LBP (32°C Ambient temperature) | - | - | - |
| 8.2 LBP (43°C Ambient temperature) | - | - | - |
| 8.3 HBP (32°C Ambient temperature) | Fan | 187 to 242 V | 187 to 242 V |
| 8.4 HBP (43°C Ambient temperature) | Fan | 187 to 242 V | 187 to 242 V |
| 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 | 1/6+ | [hp] |
| 2 Displacement | 5.54 | [cm ³] (0.338 cu.in) |
| 2.1 Bore [mm] | 21.000 | |
| 2.2 Stroke [mm] | 16.000 | |
| 3 Lubricant charge | 160 | [ml] (5.41 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO22 | |
| 4 Weight (with oil charge) | 7.2 | [kg] (15.87 lb.) |
| 5 Nitrogen charge | 0.2 to 0.3 | [kgf/cm ²] (2.84 to 4.27 psig) |

C - ELECTRICAL DATA

| | | |
|--|-----------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 220 V 50-60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Current Relay | |
| 2.1 Starting device | 213515000 | |
| 3 Start capacitor | 88-108(220) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | 4TM743KDBYY-53 | |
| 6 Start winding resistance | 28.20 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 10.70 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (50/60 Hz) | 14.30/13.90 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (50/60 Hz) | - | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (50/60 Hz) | 2.40/2.00 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CE - UKCA - UL - VDE | |

D - PERFORMANCE - CHECK POINT DATA

| TEST CONDITIONS: @220V50Hz | | | ASHRAEHBP32 Fan | | Evaporating temperature (Condensing temperature | | 7.2°C (44.96°F) 54.4°C (129.92°F) | | |
|---------------------------------|----------|-----|-------------------------------|-------------------------------|--|--------------------------------|--------------------------------------|-------|--|
| Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| 2200 | 554 | 645 | 270 | 1.91 | | 8.15 | 2.05 | 2.39 | |

| TEST CONDITIONS: @220V60Hz | | | ASHRAEHBP32 Fan | | Evaporating temperature (Condensing temperature | | 7.2°C (44.96°F) 54.4°C (129.92°F) | | |
|---------------------------------|----------|-----|-------------------------------|-------------------------------|--|--------------------------------|--------------------------------------|-------|--|
| Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] | |
| 2615 | 659 | 766 | 308 | 1.77 | | 8.49 | 2.14 | 2.49 | |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Fan | | | (Condensing temperature 45°C (+113°F)) | | | | | |
|-------------------------------|-------|---------------------------------|----------|-----|--|----------------------------|-----------------------------|--------------------------------|-----------|-------|
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -10 | (+14) | 979 | 247 | 287 | 190 | 1.73 | 5.64 | 5.25 | 1.32 | 1.54 |
| -5 | (+23) | 1328 | 335 | 389 | 211 | 1.78 | 7.64 | 6.30 | 1.59 | 1.85 |
| 0 | (+32) | 1703 | 429 | 499 | 229 | 1.82 | 9.84 | 7.41 | 1.87 | 2.17 |
| +5 | (+41) | 2105 | 530 | 617 | 245 | 1.86 | 12.24 | 8.58 | 2.16 | 2.51 |
| +10 | (+50) | 2533 | 638 | 742 | 259 | 1.89 | 14.84 | 9.80 | 2.47 | 2.87 |
| +15 | (+59) | 2988 | 753 | 875 | 270 | 1.92 | 17.64 | 11.07 | 2.79 | 3.24 |

| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Fan | | | (Condensing temperature 55°C (+131°F)) | | | | | |
|-------------------------------|-------|---------------------------------|----------|-----|--|----------------------------|-----------------------------|--------------------------------|-----------|-------|
| Evaporating temperature | | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -10 | (+14) | 1036 | 261 | 304 | 207 | 1.81 | 5.97 | 5.00 | 1.26 | 1.46 |
| -5 | (+23) | 1325 | 334 | 388 | 227 | 1.83 | 7.62 | 5.82 | 1.47 | 1.71 |
| 0 | (+32) | 1653 | 417 | 484 | 247 | 1.86 | 9.55 | 6.70 | 1.69 | 1.96 |
| +5 | (+41) | 2021 | 509 | 592 | 264 | 1.89 | 11.75 | 7.65 | 1.93 | 2.24 |
| +10 | (+50) | 2428 | 612 | 711 | 281 | 1.92 | 14.22 | 8.66 | 2.18 | 2.54 |
| +15 | (+59) | 2875 | 724 | 842 | 295 | 1.96 | 16.97 | 9.73 | 2.45 | 2.85 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @220V50Hz | | ASHRAE32 Fan | | | (Condensing temperature 65°C (+149°F)) | | | | | |
|-------------------------------|---------------------------------|-----------------|---------|----------------------------|--|--------------------------|--------------------------------|------|----------|-----------|
| Evaporating temperature | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | | |
| | °C | (°F) | [Btu/h] | | | | [kcal/h] | [W] | [Btu/Wh] | [kcal/Wh] |
| -10 | (+14) | 988 | 249 | 290 | 219 | 1.82 | 5.69 | 4.49 | 1.13 | 1.32 |
| -5 | (+23) | 1243 | 313 | 364 | 240 | 1.84 | 7.15 | 5.19 | 1.31 | 1.52 |
| 0 | (+32) | 1550 | 391 | 454 | 261 | 1.87 | 8.95 | 5.95 | 1.50 | 1.74 |
| +5 | (+41) | 1910 | 481 | 560 | 281 | 1.92 | 11.10 | 6.78 | 1.71 | 1.99 |
| +10 | (+50) | 2322 | 585 | 680 | 302 | 1.98 | 13.61 | 7.69 | 1.94 | 2.25 |
| +15 | (+59) | 2788 | 702 | 817 | 322 | 2.06 | 16.46 | 8.66 | 2.18 | 2.54 |

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 Fan | | | (Condensing temperature 45°C (+113°F)) | | | | | |
|-------------------------------|---------------------------------|-----------------|---------|----------------------------|--|--------------------------|--------------------------------|-------|----------|-----------|
| Evaporating temperature | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | | |
| | °C | (°F) | [Btu/h] | | | | [kcal/h] | [W] | [Btu/Wh] | [kcal/Wh] |
| -10 | (+14) | 1327 | 334 | 389 | 201 | 1.43 | 7.64 | 6.55 | 1.65 | 1.92 |
| -5 | (+23) | 1671 | 421 | 490 | 225 | 1.49 | 9.61 | 7.41 | 1.87 | 2.17 |
| 0 | (+32) | 2065 | 520 | 605 | 249 | 1.56 | 11.93 | 8.31 | 2.09 | 2.44 |
| +5 | (+41) | 2508 | 632 | 735 | 271 | 1.63 | 14.58 | 9.26 | 2.33 | 2.71 |
| +10 | (+50) | 3000 | 756 | 879 | 293 | 1.72 | 17.58 | 10.24 | 2.58 | 3.00 |
| +15 | (+59) | 3541 | 892 | 1038 | 314 | 1.82 | 20.91 | 11.26 | 2.84 | 3.30 |

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 Fan | | | (Condensing temperature 55°C (+131°F)) | | | | | |
|-------------------------------|---------------------------------|-----------------|---------|----------------------------|--|--------------------------|--------------------------------|------|----------|-----------|
| Evaporating temperature | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | | |
| | °C | (°F) | [Btu/h] | | | | [kcal/h] | [W] | [Btu/Wh] | [kcal/Wh] |
| -10 | (+14) | 1299 | 327 | 381 | 221 | 1.48 | 7.48 | 5.85 | 1.47 | 1.71 |
| -5 | (+23) | 1613 | 406 | 473 | 245 | 1.55 | 9.28 | 6.58 | 1.66 | 1.93 |
| 0 | (+32) | 1981 | 499 | 581 | 271 | 1.63 | 11.44 | 7.32 | 1.85 | 2.15 |
| +5 | (+41) | 2405 | 606 | 705 | 297 | 1.72 | 13.98 | 8.08 | 2.04 | 2.37 |
| +10 | (+50) | 2884 | 727 | 845 | 325 | 1.83 | 16.90 | 8.86 | 2.23 | 2.60 |
| +15 | (+59) | 3418 | 861 | 1001 | 354 | 1.94 | 20.18 | 9.65 | 2.43 | 2.83 |

| TEST CONDITIONS: @220V60Hz | | ASHRAE32 Fan | | | (Condensing temperature 65°C (+149°F)) | | | | | |
|-------------------------------|---------------------------------|-----------------|---------|----------------------------|--|--------------------------|--------------------------------|------|----------|-----------|
| Evaporating temperature | Cooling capacity (Qe) +/- 5% | | | Input power (We) +/- 5% | Electric current +/- 5% | Mass flow rate +/- 5% | Efficiency EER & COP +/- 7% | | | |
| | °C | (°F) | [Btu/h] | | | | [kcal/h] | [W] | [Btu/Wh] | [kcal/Wh] |
| -10 | (+14) | 1232 | 310 | 361 | 246 | 1.49 | 7.09 | 4.95 | 1.25 | 1.45 |
| -5 | (+23) | 1526 | 385 | 447 | 268 | 1.59 | 8.78 | 5.69 | 1.43 | 1.67 |
| 0 | (+32) | 1882 | 474 | 551 | 293 | 1.70 | 10.87 | 6.42 | 1.62 | 1.88 |
| +5 | (+41) | 2298 | 579 | 673 | 321 | 1.82 | 13.36 | 7.15 | 1.80 | 2.09 |
| +10 | (+50) | 2774 | 699 | 813 | 352 | 1.96 | 16.25 | 7.86 | 1.98 | 2.30 |
| +15 | (+59) | 3311 | 834 | 970 | 386 | 2.11 | 19.55 | 8.57 | 2.16 | 2.51 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|------------------|------|--------------------------|
| 1 Base plate | Universal | | |
| 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 | 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 | | |