



ROYCECROSSGROUP



ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

| | | | |
|---------------------------------------|------------------|--------------------|-------------------|
| NAMEPLATE DATA | | | |
| Y3-200L-8 FRAME | IEC TYPE | 15 kW | 730 r/min |
| 8 POLE | 3 PHASE | 415 VOLTS | 50 Hz |
| ROYCE CROSS GROUP MANUFACTURER | 30.3 AMPS | IP56 IP | |
| | S1 DUTY | F INS.CLASS | CONNECTION |

| MAJOR CONTENTS | UNIT | TEST VALUE |
|--|--------|------------|
| STATOR RESISTANCE OF PHASE | OHM | 0.75335 |
| NO LOAD CURRENT | AMP | 18.85 |
| NO LOAD INPUT | W | 709.1 |
| CORE LOSS(Pfe) | W | 253.5 |
| WINDAGE FRICTION LOSS(Pfw) | W | 220.2 |
| STATOR WINDING LOSS(Pcu1) | W | 684.9 |
| ROTOR WINDING LOSS(Pcu2) | W | 413.9 |
| STRAY LOAD LOSS(Ps) | W | 85.2 |
| FULL LOAD CURRENT | AMP | 30.65 |
| LOCKED ROTOR CURRENT | AMP | 203.56 |
| LOCKED ROTOR CURRENT/FULL LOAD CURRENT | P.U. | 6.72 |
| FULL LOAD TORQUE | N.m | 196.14 |
| LOCKED ROTOR TORQUE | N.m | 415.34 |
| LOCKED ROTOR TORQUE/FULL LOAD TORQUE | P.U. | 2.12 |
| PULL OUT TORQUE | N.m | 600.37 |
| PULL OUT TORQUE/FULL LOAD TORQUE | P.U. | 3.06 |
| INPUT @ FULL LOAD | kW | 16.66 |
| EFFICIENCY @ FULL LOAD | % | 90.05 |
| POWER FACTOR @ FULL LOAD | | 0.76 |
| FULL LOAD SLIP | % | 2.633 |
| FULL LOAD SPEED | r/min | 730.3 |
| STATOR WINDING TEMPERATURE RISE | K | 57 |
| D.E. BEARINGS TEMPERATURE BY PT100 | Deg. C | 46.6 |
| AMBIENT TEMPERATURE OF TESTING | Deg. C | 17.4 |
| NOISE | dB(A) | 71 |
| VIBRATION | mm/s | 0.9 |

The data above is calculated as per IEC 34-2, all data at nominal Volts.

| | | | | | |
|--|--------------------------|-------------------|---|--|---|
| | ROYCE CROSS GROUP | SERIAL NO. | 0 | | |
| | | | | | |
| | | | | | |
| | | | | | 0 |

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

ROYCE CROSS GROUP

| | | | | | |
|------------|-----------|---------|--------|------------|---------|
| Type | Y3-200L-8 | Poles | 8 | Power | 15.0 kW |
| Voltage | 415 V | Current | 30.3 A | Frequency | 50 Hz |
| Speed | 730 r/min | Duty | S1 | Connection | △ |
| Ins. class | F | Weight | 335 kg | | IP56 |

NO LOAD TEST

| VOL | mul. | Hz | I01 | I02 | I03 | mul. | W1 | W2 | mul. | Ω |
|-------|------|----|-------|-------|-------|------|--------|-------|------|-------|
| 450.5 | 1 | 50 | 2.245 | 2.233 | 2.262 | 10 | -438.7 | 525.2 | 10 | 0.441 |
| 430.5 | 1 | 50 | 2.023 | 2.015 | 2.041 | 10 | -376.9 | 453.3 | 10 | 0.441 |
| 415.2 | 1 | 50 | 1.884 | 1.876 | 1.901 | 10 | -337.0 | 408.0 | 10 | 0.441 |
| 405.1 | 1 | 50 | 1.802 | 1.795 | 1.818 | 10 | -314.1 | 381.2 | 10 | 0.441 |
| 333.5 | 1 | 50 | 2.775 | 2.766 | 2.805 | 5 | -389.4 | 489.2 | 5 | 0.441 |
| 270.7 | 1 | 50 | 2.208 | 2.201 | 2.232 | 5 | -241.7 | 323.8 | 5 | 0.441 |
| 206.1 | 1 | 50 | 1.665 | 1.660 | 1.682 | 5 | -127.8 | 194.6 | 5 | 0.441 |
| 180.4 | 1 | 50 | 3.645 | 3.650 | 3.681 | 2 | -230.8 | 387.0 | 2 | 0.441 |
| 140.7 | 1 | 50 | 2.871 | 2.876 | 2.901 | 2 | -117.8 | 255.4 | 2 | 0.441 |
| 105.2 | 1 | 50 | 2.241 | 2.241 | 2.258 | 2 | -41.6 | 166.9 | 2 | 0.441 |

| | | |
|--------------------------|--------------------|---------------|
| ROYCE CROSS GROUP | Manufacturing Date | Serial No |
| | 0.00 | 0 |
| | Test Date | Report Number |
| | 0/01/1900 | 0 |

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

ROYCE CROSS GROUP

| | | | | | | |
|------------|------------------|---------|---------------|------------|------|-----------|
| Type | Y3-200L-8 | Poles | 8 | Power | 15.0 | kW |
| Voltage | 415 V | Current | 30.3 A | Frequency | 50.0 | Hz |
| Speed | 730 r/min | Duty | S1 | Connection | | |
| Ins. class | F | Weight | 335 kg | | IP56 | |

LOCKED ROTOR TEST

| VOL | mul. | Ik1 | Ik2 | Ik3 | mul. | W1 | W2 | mul. | Torqure N. m |
|-------|------|-------|-------|-------|------|-------|--------|------|-----------------|
| 414.4 | 1.0 | 4.063 | 4.064 | 4.065 | 50.0 | -84.6 | 1416.4 | 50 | 414.05 |
| 367.6 | 1.0 | 3.495 | 3.495 | 3.498 | 50.0 | -73.3 | 1078.2 | 50 | 313.11 |
| 327.1 | 1.0 | 3.016 | 3.016 | 3.022 | 50.0 | -63.6 | 823.5 | 50 | 238.14 |
| 285.1 | 1.0 | 2.550 | 2.552 | 2.559 | 50.0 | -52.8 | 602.8 | 50 | 172.48 |
| 243.8 | 1.0 | 2.120 | 2.121 | 2.126 | 50.0 | -43.5 | 425.2 | 50 | 122.01 |
| 202.6 | 1.0 | 4.281 | 4.284 | 4.297 | 20.0 | -83.0 | 707.0 | 20 | 80.36 |
| 152.5 | 1.0 | 3.119 | 3.119 | 3.130 | 20.0 | -51.1 | 383.5 | 20 | 42.14 |
| 102.4 | 1.0 | 2.059 | 2.053 | 2.063 | 20.0 | -24.2 | 168.8 | 20 | 17.64 |

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|------------|-----------|--|---------|--------|--|------------|-------|--|
| Type | Y3-200L-8 | | Poles | 8 | | Power | 15 kW | |
| Voltage | 415 V | | Current | 30.3 A | | Frequency | 50 Hz | |
| Speed | 730 r/min | | Duty | S1 | | Connection | | |
| Ins. class | F | | Weight | 335 kg | | IP56 | | |

TEMPERATURE RISE TEST

| TIME (h:min) | V | I1 | I2 | I3 | mul. | W1 | W2 | mul. | T1 °C | T2 °C | T3 °C | T4 °C | T5 °C | T6 °C | T7 °C | T8 °C | T9 °C | T10 °C | T11 °C | T12 °C | T13 °C |
|-----------------|-------|--------|-------|-------|------|----------|--------|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|
| 11:31 | 415.5 | 3.050 | 3.042 | 3.058 | 10 | 385.3 | 1249.6 | 10 | 39.6 | — | — | — | — | — | — | — | — | — | 37.6 | — | 14.1 |
| 12:00 | 415.5 | 3.072 | 3.062 | 3.083 | 10 | 393.7 | 1259.6 | 10 | 41.3 | — | — | — | — | — | — | — | — | — | 39.2 | — | 14.8 |
| 12:30 | 415.6 | 3.068 | 3.059 | 3.080 | 10 | 395.1 | 1258.8 | 10 | 42.8 | — | — | — | — | — | — | — | — | — | 40.1 | — | 15.6 |
| 13:00 | 415.3 | 3.074 | 3.064 | 3.085 | 10 | 399.0 | 1260.0 | 10 | 43.6 | — | — | — | — | — | — | — | — | — | 42.2 | — | 16.0 |
| 13:30 | 415.3 | 3.093 | 3.082 | 3.104 | 10 | 405.9 | 1269.2 | 10 | 44.6 | — | — | — | — | — | — | — | — | — | 43.1 | — | 16.7 |
| 14:00 | 415.3 | 3.062 | 3.053 | 3.075 | 10 | 396.7 | 1255.8 | 10 | 45.4 | — | — | — | — | — | — | — | — | — | 45.0 | — | 16.9 |
| 14:30 | 415.4 | 3.086 | 3.077 | 3.092 | 10 | 402.4 | 1266.8 | 10 | 46.0 | — | — | — | — | — | — | — | — | — | 46.8 | — | 17.4 |
| 14:59 | 415.4 | 3.072 | 3.062 | 3.078 | 10 | 399.1 | 1259.9 | 10 | 46.6 | — | — | — | — | — | — | — | — | — | 47.0 | — | 18.0 |
| 最后三点平均值 | | 30.732 | | | A | 16602.33 | | W | 46.6 | — | — | — | — | — | — | — | — | — | 47.0 | — | 17.4 |

T1 T2: DE BEARING TEMPERATURE
T3~T10: DE WINDING TEMPERATURE

T11: CORE TEMPERATRE
T13: AMBIENT TEMPERATURE

T12: FRAME TEMPERATRE

WINDING RESISTANCE (HOT) AT END OF TEMPERATURE RISE TEST

| | | | | | | | | |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|
| TIME (S) | 51 | 65 | 76 | 89 | 105 | 119 | 138 | 152 |
| RESISTANCE | 0.4684 | 0.4670 | 0.4659 | 0.4648 | 0.4635 | 0.4626 | 0.4614 | 0.4605 |

WINDING RESISTANCE (COLD)

| | | | | | | |
|---|--------|--------|--------|---------|---------|--------------|
| △ | U1-V1 | U1-W1 | V1-W1 | AVERAGE | MIN | AMBIENT TEM. |
| | 0.3736 | 0.3735 | 0.3738 | 0.37363 | 0.37350 | 10.5 °C |
| Y | U1-U2 | V1-V2 | W1-W2 | AVERAGE | MIN | AMBIENT TEM. |
| | 0 | 0 | 0 | 0.000 | 0 | 0 °C |

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|------------|---------------|
| Manu. Date | Serial No |
| 0.00 | 0 |
| Test Date | Report Number |
| 0/01/1900 | 0 |

ELECTRIC MOTOR TEST REPORT – THREE PHASE INDUCTION MOTOR

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|------------|-----------|--------------|---------|--------------|------------|-----------|------|-----------|
| Type | Y3-200L-8 | Poles | 8 | output Power | 15.0 | kW | | |
| Voltage | 415 | V | Current | 30.3 | A | Frequency | 50.0 | Hz |
| Speed | 730 | r/min | Duty | S1 | Connection | | | |
| Ins. class | | F | Weight | 335 | kg | IP56 | | |

LOAD TEST

| V | Hz | A1 (unit) | A2 (unit) | A3 (unit) | mul. | W1 (unit) | W2 (unit) | mul. | r/min |
|-------|-------|--------------|--------------|--------------|------|--------------|---------------|------|-------|
| 415.1 | 50.01 | 3.841 | 3.833 | 3.845 | 10 | 629.2 | 1613.0 | 10 | 723.0 |
| 415.1 | 50.01 | 3.445 | 3.434 | 3.450 | 10 | 517.4 | 1438.0 | 10 | 727.2 |
| 415.1 | 50.01 | 3.074 | 3.066 | 3.080 | 10 | 400.3 | 1271.8 | 10 | 730.8 |
| 415.1 | 50.01 | 2.779 | 2.770 | 2.784 | 10 | 297.8 | 1132.6 | 10 | 733.8 |
| 415.1 | 50.01 | 2.454 | 2.444 | 2.460 | 10 | 169.2 | 969.6 | 10 | 737.4 |
| 415.1 | 50.01 | 2.258 | 2.249 | 2.266 | 10 | 75.4 | 860.0 | 10 | 739.8 |
| 415.0 | 50.01 | 2.062 | 2.054 | 2.071 | 10 | -38.0 | 733.2 | 10 | 742.8 |
| 415.1 | 50.01 | 1.895 | 1.888 | 1.909 | 10 | -180.7 | 582.4 | 10 | 746.4 |

| % LOAD | OUTPUT W | INPUT W | AMPS A | Pcu1 W | SLIP % | Pcu2 W | Ps W | EFF % | P. F. |
|------------|-------------|------------|-----------|-----------|-----------|-----------|---------|----------|-------|
| 150 | 22500 | 25427.3 | 42.554 | 1320.1 | 4.311 | 1028.4 | 161.3 | 88.49 | 0.831 |
| 125 | 18750 | 20995.5 | 36.424 | 967.2 | 3.425 | 677.2 | 120.8 | 89.30 | 0.802 |
| 100 | 15000 | 16657.2 | 30.651 | 684.9 | 2.633 | 413.9 | 85.2 | 90.05 | 0.756 |
| 75 | 11250 | 12500.3 | 25.767 | 484.0 | 1.930 | 227.0 | 60.5 | 90.00 | 0.675 |
| 50 | 7500 | 8467.6 | 21.855 | 348.2 | 1.263 | 99.3 | 43.4 | 88.57 | 0.539 |
| 25 | 3750 | 4555.1 | 19.276 | 270.9 | 0.603 | 24.3 | 33.8 | 82.33 | 0.329 |

| | | |
|--------------------------|-----------------------------------|-----------------------|
| ROYCE CROSS GROUP | Manufacturing Date 0.00 | Serial No 0 |
| | Test Date 0/01/1900 | Report Number 0 |