



**ROYCECROSSGROUP**



**ROYCE CROSS GROUP**

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

<b>NAMEPLATE DATA</b>			
Y3-100L1-4 <b>FRAME</b>	IEC TYPE	2.2 <b>kW</b>	1440 <b>r/min</b>
4 <b>POLE</b>	3 <b>PHASE</b>	415 <b>VOLTS</b>	50 <b>Hz</b>
<b>ROYCE CROSS GROUP MANUFACTURER</b>	4.3 <b>AMPS</b>	IP55 <b>IP</b>	
	S1 <b>DUTY</b>	F <b>INS.CLASS</b>	Y <b>CONNECTION</b>

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	2.52507
NO LOAD CURRENT	AMP	2.87
NO LOAD INPUT	W	159.6
CORE LOSS(Pfe)	W	68.3
WINDAGE FRICTION LOSS(Pfw)	W	33.2
STATOR WINDING LOSS(Pcu1)	W	131.4
ROTOR WINDING LOSS(Pcu2)	W	84.3
STRAY LOAD LOSS(Ps)	W	12.4
FULL LOAD CURRENT	AMP	4.24
LOCKED ROTOR CURRENT	AMP	29.58
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.88
FULL LOAD TORQUE	N.m	14.53
LOCKED ROTOR TORQUE	N.m	32.54
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.23
PULL OUT TORQUE	N.m	49.19
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	3.37
INPUT @ FULL LOAD	kW	2.53
EFFICIENCY @ FULL LOAD	%	86.97
POWER FACTOR @ FULL LOAD		0.83
FULL LOAD SLIP	%	3.618
FULL LOAD SPEED	r/min	1445.7
STATOR WINDING TEMPERATURE RISE	K	57
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	38.7
AMBIENT TEMPERATURE OF TESTING	Deg. C	10.8
NOISE	dB(A)	60
VIBRATION	mm/s	0.5

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

	<b>ROYCE CROSS GROUP</b>	<b>SERIAL NO.</b>	0		
					0

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### ROYCE CROSS GROUP

Type	Y3-100L1-4	<b>Poles</b>	4	<b>Power</b>	2.2 kW
Voltage	415 V	<b>Current</b>	4.3 A	<b>Frequency</b>	50 Hz
Speed	1440 r/min	<b>Duty</b>	S1	<b>Connection</b>	Y
Ins. class	F	<b>Weight</b>	0 kg		IP55

### NO LOAD TEST

VOL	mul.	Hz	I01	I02	I03	mul.	W1	W2	mul.	
482.7	1	50	4.393	4.480	4.226	1	-963.6	1268.9	1	71.9
444.3	1	50	3.412	3.485	3.310	1	-691.8	896.8	1	71.8
414.1	1	50	2.858	2.914	2.792	1	-535.7	694.1	1	71.8
361.1	1	50	2.169	2.196	2.143	1	-342.4	456.1	1	71.8
307.1	1	50	1.696	1.705	1.684	1	-218.1	305.3	1	71.8
252.4	1	50	1.319	1.322	1.311	1	-129.9	201.5	1	71.7
206.6	1	50	1.041	1.042	1.034	1	-77.6	134.9	1	71.7
182.3	1	50	0.903	0.902	0.898	1	-55.7	105.7	1	71.6
150.3	1	50	0.741	0.740	0.736	1	-30.1	76.5	1	71.6
88.0	1	50	0.494	0.491	0.489	1	0.0	37.6	1	71.4

<b>ROYCE CROSS GROUP</b>	<b>Manufacturing Date</b>	0.00	<b>Serial No</b>	0
	<b>Test Date</b>	0/01/1900	<b>Report Number</b>	0

# ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

## ROYCE CROSS GROUP

Type	Y3-100L1-4	Poles	4	Power	2.2	<b>kW</b>
Voltage	415 <b>V</b>	Current	4.3 <b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	1440 <b>r/min</b>	Duty	S1	Connection	Y	
Ins. class	F	Weight	0 <b>kg</b>		IP55	

### LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqure N. m
414.3	1.0	2.961	2.952	2.943	10.0	64.5	1413.7	10	32.43
367.5	1.0	2.518	2.509	2.500	10.0	38.0	1060.8	10	24.25
318.7	1.0	2.080	2.069	2.056	10.0	16.2	753.5	10	17.04
284.2	1.0	1.790	1.780	1.765	10.0	0.0	574.6	10	12.84
239.1	1.0	1.427	1.418	1.401	10.0	-9.3	381.3	10	8.33
200.6	1.0	2.271	2.263	2.233	5.0	-26.7	502.9	5	5.56
152.5	1.0	1.608	1.607	1.583	5.0	-23.2	266.1	5	2.85
108.7	1.0	1.078	1.079	1.067	5.0	-13.8	125.2	5	1.35

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	0.00	0
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## ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

### ROYCE CROSS GROUP

Type	Y3-100L1-4		Poles	4		Power	2.2 kW	
Voltage	415 V		Current	4.3 A		Frequency	50 Hz	
Speed	1440 r/min		Duty	S1		Connection	Y	
Ins. class	F		Weight	0 kg			IP55	

### 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	
11:00	415.4	2.116	2.167	2.129	2	289.1	977.2	2	36.2	—	74.5	71.7	—	—	—	—	—	—	—	—	—	11.2
11:30	415.3	2.120	2.171	2.133	2	292.1	979.5	2	38.1	—	77.2	74.0	—	—	—	—	—	—	—	—	—	11.1
12:00	415.3	2.115	2.166	2.129	2	291.0	977.1	2	38.5	—	78.5	75.4	—	—	—	—	—	—	—	—	—	10.8
12:30	415.4	2.117	2.167	2.129	2	291.0	978.0	2	38.7	—	78.7	75.5	—	—	—	—	—	—	—	—	—	10.8
13:00	415.4	2.128	2.178	2.141	2	295.8	983.6	2	38.7	—	78.9	75.8	—	—	—	—	—	—	—	—	—	10.7
最后三点平均值		4.282			A	2544.333		W	38.7	—	78.7	75.6	—	—	—	—	—	—	—	—	—	10.8

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)	39	55	67	85	102	125		
RESISTANCE	2.3220	2.3183	2.3156	2.3125	2.3093	2.3062		

#### WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0	0	0	0.00000	0.00000	0 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	1.8596	1.8598	1.861	1.860	1.8596	8.1 °C

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Type	Y3-100L1-4	Poles	4	output Power	2.2	<b>kW</b>		
Voltage	415	<b>V</b>	Current	4.3	<b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	1440	<b>r/min</b>	Duty	S1	Connection	Y		
Ins. class	F	Weight	0	<b>kg</b>	IP55			

### LOAD TEST

V	Hz	A1 (unit)	A2 (unit)	A3 (unit)	mul.	W1 (unit)	W2 (unit )	mul.	r/min
415.1	50.02	2.647	2.698	2.666	2	486.2	1246.3	2	1428.4
415.3	50.02	2.506	2.556	2.524	2	439.3	1178.4	2	1434.2
415.2	50.02	2.123	2.173	2.137	2	301.2	989.3	2	1447.8
415.0	50.02	1.802	1.850	1.807	2	165.8	818.4	2	1460.0
415.0	50.02	1.532	1.577	1.528	2	21.8	652.6	2	1471.7
415.2	50.02	1.462	1.504	1.452	2	-29.6	598.7	2	1477.3
415.0	50.02	1.374	1.413	1.358	2	-102.3	521.0	2	1483.9

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
<b>150</b>	3300	3880.0	5.845	250.3	5.764	204.9	23.2	85.05	0.924
<b>125</b>	2750	3186.0	5.000	183.1	4.568	134.1	17.2	86.32	0.887
<b>100</b>	2200	2529.6	4.235	131.4	3.618	84.3	12.4	86.97	0.831
<b>75</b>	1650	1902.2	3.581	93.9	2.750	47.9	8.8	86.74	0.739
<b>50</b>	1100	1298.9	3.057	68.5	1.926	22.4	6.4	84.69	0.591
<b>25</b>	550	715.3	2.689	53.0	0.978	5.8	5.0	76.89	0.370

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Voltage	415	<b>V</b>	Current	4.3	<b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	1440	<b>r/min</b>	Duty	S1	Connection	Y		
Ins. class	F	Weight	0	<b>kg</b>	IP55			

### Load Curve

