



**ROYCECROSSGROUP**



**ROYCE CROSS GROUP**

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

<b>NAMEPLATE DATA</b>			
Y3-200L1-2 FRAME	IEC TYPE	30 kW	2917 r/min
2 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	49.0 AMPS	IP55 IP	
	S1 DUTY	F INS.CLASS	CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	0.27210
NO LOAD CURRENT	AMP	12.64
NO LOAD INPUT	W	803.6
CORE LOSS(Pfe)	W	274.6
WINDAGE FRICTION LOSS(Pfw)	W	488.1
STATOR WINDING LOSS(Pcu1)	W	673.5
ROTOR WINDING LOSS(Pcu2)	W	597.7
STRAY LOAD LOSS(Ps)	W	169.2
FULL LOAD CURRENT	AMP	50.09
LOCKED ROTOR CURRENT	AMP	329.23
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.64
FULL LOAD TORQUE	N.m	97.35
LOCKED ROTOR TORQUE	N.m	214.22
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.20
PULL OUT TORQUE	N.m	268.48
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.73
INPUT @ FULL LOAD	kW	32.20
EFFICIENCY @ FULL LOAD	%	93.16
POWER FACTOR @ FULL LOAD		0.89
FULL LOAD SLIP	%	1.912
FULL LOAD SPEED	r/min	2942.6
STATOR WINDING TEMPERATURE RISE	K	65
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	56.7
AMBIENT TEMPERATURE OF TESTING	Deg. C	18.9
NOISE	dB(A)	85
VIBRATION	mm/s	1.2

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

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

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## ROYCE CROSS GROUP

Type	Y3-200L1-2	Poles	2	Power	30.0 kW
Voltage	415 V	Current	49 A	Frequency	50 Hz
Speed	2917 r/min	Duty	S1	Connection	△
Ins. class	F	Weight	0 kg		IP55

### NO LOAD TEST

VOL	mul.	Hz	I01	I02	I03	mul.	W1	W2	mul.	
501.4	1	50	2.615	2.610	2.556	10	-511.3	658.2	10	75.7
453.7	1	50	1.688	1.689	1.650	10	-292.9	390.0	10	75.4
414.8	1	50	1.269	1.272	1.248	10	-192.9	273.3	10	75.2
367.3	1	50	2.022	2.025	2.032	5	-248.9	392.2	5	74.8
318.7	1	50	1.684	1.689	1.698	5	-163.5	295.5	5	74.6
255.4	1	50	1.326	1.330	1.337	5	-79.1	202.8	5	74.3
205.2	1	50	2.642	2.700	2.768	2	-76.1	356.1	2	73.8
171.4	1	50	2.314	2.374	2.434	2	-8.8	289.4	2	73.5
139.0	1	50	2.085	2.148	2.197	2	29.9	229.3	2	73.5
109.8	1	50	2.028	2.093	2.147	2	65.1	190.8	2	73.3

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	0.00	0
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## ROYCE CROSS GROUP

Type	Y3-200L1-2	Poles	2	Power	30.0	<b>kW</b>
Voltage	415 <b>V</b>	Current	49 <b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	2917 <b>r/min</b>	Duty	S1	Connection		
Ins. class	F	Weight	0 <b>kg</b>		IP55	

### LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu N. m
411.6	1.0	1.621	1.638	1.625	200.0	-94.7	649.7	200	210.48
371.1	1.0	2.804	2.839	2.814	100.0	-152.5	1014.4	100	165.74
324.7	1.0	2.348	2.382	2.356	100.0	-114.2	741.4	100	122.02
281.5	1.0	1.950	1.978	1.957	100.0	-86.9	532.2	100	88.46
240.5	1.0	1.601	1.627	1.607	100.0	-63.6	370.4	100	68.63
193.0	1.0	2.479	2.516	2.488	50.0	-85.8	457.5	50	38.64
153.7	1.0	1.925	1.955	1.931	50.0	-55.0	280.4	50	23.89
109.0	1.0	1.340	1.359	1.344	50.0	-27.6	137.5	50	11.69

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## ROYCE CROSS GROUP

Type	Y3-200L1-2			Poles	2		Power	30 kW	
Voltage	415 V			Current	49 A		Frequency	50 Hz	
Speed	2917 r/min			Duty	S1		Connection		
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
10:30	415.5	2.452	2.462	2.453	20	572.0	1068.2	20	53.0	—	80.9	—	—	—	—	—	—	—	56.0	—	17.3
11:00	415.4	2.486	2.494	2.486	20	581.9	1081.6	20	54.2	—	82.8	—	—	—	—	—	—	—	57.2	—	17.6
11:30	415.4	2.481	2.488	2.480	20	582.4	1079.3	20	55.4	—	84.6	—	—	—	—	—	—	—	58.2	—	17.8
12:00	415.4	2.486	2.494	2.484	20	578.9	1079.3	20	56.3	—	85.0	—	—	—	—	—	—	—	58.9	—	19.1
12:30	415.5	2.481	2.488	2.481	20	575.7	1075.5	20	56.4	—	86.4	—	—	—	—	—	—	—	59.0	—	18.9
13:00	415.7	2.458	2.467	2.456	20	572.7	1068.6	20	56.4	—	86.2	—	—	—	—	—	—	—	58.9	—	18.7
13:30	415.5	2.483	2.490	2.481	20	575.6	1073.4	20	56.5	—	86.2	—	—	—	—	—	—	—	58.9	—	19.2
14:00	415.7	2.466	2.474	2.464	20	575.1	1070.3	20	56.7	—	86.3	—	—	—	—	—	—	—	59.3	—	18.9
最后三点平均值		49.418			A	32904.67		W	56.7	—	86.2	—	—	—	—	—	—	—	59.3	—	18.9

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)	55	82	106	130	153	179	201	232
RESISTANCE	0.1734	0.1724	0.1718	0.1712	0.1705	0.1699	0.1695	0.1689

#### WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.139	0.1388	0.1386	0.13880	0.13860	17.5 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	0	0	0	0.000	0	0 °C

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Type	Y3-200L1-2	Poles	2	output Power	30.0	<b>kW</b>		
Voltage	415	<b>V</b>	Current	49	<b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	2917	<b>r/min</b>	Duty	S1	Connection			
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
415.0	50.00	3.571	3.582	3.577	20	816.0	1492.3	20	2916.4
415.1	50.00	3.046	3.056	3.048	20	698.8	1274.8	20	2929.2
415.1	50.00	2.573	2.583	2.574	20	581.0	1078.7	20	2941.8
414.9	50.00	2.275	2.285	2.276	20	501.3	954.7	20	2949.8
415.1	50.00	1.957	1.967	1.957	20	410.7	823.1	20	2958.1
415.1	50.00	1.294	1.303	1.289	20	197.3	538.6	20	2974.9
415.1	50.00	1.047	1.053	1.039	20	105.4	424.5	20	2982.2

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
<b>150</b>	45000	49138.4	76.161	1556.9	3.032	1433.3	385.4	91.58	0.898
<b>125</b>	37500	40555.9	62.715	1055.7	2.477	971.9	265.5	92.47	0.900
<b>100</b>	30000	32203.1	50.091	673.5	1.912	597.7	169.2	93.16	0.894
<b>75</b>	22500	24061.5	38.089	389.4	1.365	318.5	90.8	93.51	0.879
<b>50</b>	15000	16172.0	27.866	208.4	0.937	147.2	53.7	92.75	0.807
<b>25</b>	7500	8411.3	18.269	89.6	0.472	38.0	21.1	89.17	0.641

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## ROYCE CROSS GROUP

Type	Y3-200L1-2	Poles	2	output Power	30.0	kW
Voltage	415 V	Current	49 A	Frequency	50.0	Hz
Speed	2917 r/min	Duty	S1	Connection		
Ins. class	F	Weight	0 kg			IP55

### Load Curve

