



**ROYCECROSSGROUP**



**ROYCE CROSS GROUP**

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

<b>NAMEPLATE DATA</b>			
Y3-315L1-6 FRAME	IEC TYPE	110 kW	990 r/min
6 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	187.0 AMPS	IP56 IP	
	S1 DUTY	F INS.CLASS	CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	0.03960
NO LOAD CURRENT	AMP	63.57
NO LOAD INPUT	W	2585.5
CORE LOSS(Pfe)	W	1769.9
WINDAGE FRICTION LOSS(Pfw)	W	651.9
STATOR WINDING LOSS(Pcu1)	W	1380.9
ROTOR WINDING LOSS(Pcu2)	W	1121.1
STRAY LOAD LOSS(Ps)	W	580.7
FULL LOAD CURRENT	AMP	187.08
LOCKED ROTOR CURRENT	AMP	1305.15
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.98
FULL LOAD TORQUE	N.m	1060.98
LOCKED ROTOR TORQUE	N.m	2059.93
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	1.94
PULL OUT TORQUE	N.m	3107.08
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.93
INPUT @ FULL LOAD	kW	115.51
EFFICIENCY @ FULL LOAD	%	95.23
POWER FACTOR @ FULL LOAD		0.86
FULL LOAD SLIP	%	0.998
FULL LOAD SPEED	r/min	990.0
STATOR WINDING TEMPERATURE RISE	K	65
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	50.2
AMBIENT TEMPERATURE OF TESTING	Deg. C	20.6
NOISE	dB(A)	83
VIBRATION	mm/s	1.1

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	Y3-315L1-6	<b>Poles</b>	6	<b>Power</b>	110.0 kW
Voltage	415 V	<b>Current</b>	187 A	<b>Frequency</b>	50 Hz
Speed	990 r/min	<b>Duty</b>	S1	<b>Connection</b>	△
Ins. class	F	<b>Weight</b>	0 kg		IP56

### NO LOAD TEST

VOL	mul.	Hz	I01	I02	I03	mul.	W1	W2	mul.	Ω
491.6	1	50	2.445	2.447	2.471	50	-637.7	758.9	50	0.025
450.4	1	50	1.686	1.700	1.713	50	-405.7	479.0	50	0.025
415.5	1	50	1.276	1.270	1.280	50	-282.0	333.9	50	0.025
359.7	1	50	2.234	2.333	2.248	20	-445.2	534.5	20	0.025
320.6	1	50	1.872	1.941	1.875	20	-325.4	403.0	20	0.025
272.4	1	50	1.505	1.586	1.542	20	-214.9	280.3	20	0.025
205.9	1	50	2.216	2.252	2.280	10	-210.9	315.5	10	0.025
179.1	1	50	1.899	1.939	1.936	10	-153.4	243.8	10	0.025
144.9	1	50	1.545	1.572	1.550	10	-86.9	174.8	10	0.025
107.9	1	50	2.412	2.362	2.462	5	-64.5	213.0	5	0.025

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

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## ROYCE CROSS GROUP

Type	Y3-315L1-6	Poles	6	Power	110.0	<b>kW</b>
Voltage	415 <b>V</b>	Current	187 <b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	990 <b>r/min</b>	Duty	S1	Connection		
Ins. class	F	Weight	0 <b>kg</b>		IP56	

### LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu N. m
231.1	1.0	3.088	3.096	3.135	200.0	-130.2	566.7	200	466.72
201.1	1.0	2.627	2.631	2.661	200.0	-101.6	416.0	200	332.35
168.8	1.0	2.138	2.142	2.169	200.0	-73.2	281.7	200	224.43
150.1	1.0	1.858	1.862	1.881	200.0	-58.5	215.9	200	167.96
128.9	1.0	3.115	3.107	3.146	100.0	-87.4	307.2	100	118.65
107.0	1.0	2.514	2.511	2.538	100.0	-60.2	204.4	100	77.19

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## ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

### ROYCE CROSS GROUP

Type	Y3-315L1-6		Poles	6		Power	110 kW	
Voltage	415 V		Current	187 A		Frequency	50 Hz	
Speed	990 r/min		Duty	S1		Connection		
Ins. class	F		Weight	0 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
11:30	415.2	1.887	1.889	1.917	100	335.1	783.6	100	47.1	—	—	—	—	—	—	—	—	—	52.7	—	20.4
12:00	415.3	1.867	1.869	1.897	100	333.1	776.3	100	48.2	—	—	—	—	—	—	—	—	—	53.8	—	20.3
12:30	415.2	1.853	1.865	1.882	100	327.1	774.4	100	49.0	—	—	—	—	—	—	—	—	—	55.2	—	20.9
13:00	415.3	1.862	1.873	1.894	100	331.4	778.0	100	49.9	—	—	—	—	—	—	—	—	—	55.5	—	20.7
13:30	415.5	1.872	1.871	1.896	100	334.2	777.3	100	50.2	—	—	—	—	—	—	—	—	—	55.9	—	20.6
14:00	415.3	1.876	1.877	1.895	100	332.9	779.3	100	50.2	—	—	—	—	—	—	—	—	—	55.8	—	20.6
最后三点平均值		187.965		A		111103.3		W	50.2	—	—	—	—	—	—	—	—	—	55.8	—	20.6

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)	70	88	105	146	170	198	221
RESISTANCE	0.02572	0.02568	0.02563	0.02553	0.02547	0.02542	0.02537

#### WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.02028	0.02028	0.02033	0.02030	0.02028	18.7 °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	Y3-315L1-6	Poles	6	output Power	110.0	<b>kW</b>		
Voltage	415	<b>V</b>	Current	187	<b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	990	<b>r/min</b>	Duty	S1	Connection			
Ins. class		F	Weight	0	<b>kg</b>	IP56		

### LOAD TEST

V	Hz	A1 (unit)	A2 (unit)	A3 (unit)	mul.	W1 (unit)	W2 (unit )	mul.	r/min
414.8	50.00	2.328	2.331	2.355	100	454.0	1007.4	100	987.0
415.1	50.00	2.042	2.054	2.071	100	390.6	887.5	100	988.8
415.1	50.00	1.803	1.802	1.827	100	336.8	778.5	100	990.6
415.1	50.00	1.630	1.630	1.646	100	288.2	702.1	100	991.8
415.1	50.00	2.698	2.710	2.745	50	406.9	1156.3	50	993.6
415.0	50.01	2.189	2.197	2.227	50	232.7	910.6	50	995.4
415.3	50.00	1.844	1.851	1.855	50	74.2	728.6	50	996.6
415.3	50.00	1.616	1.609	1.633	50	-44.2	577.3	50	997.8
415.3	49.99	1.457	1.471	1.483	50	-180.9	432.9	50	999.0

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
<b>150</b>	165000	174121.6	276.852	3024.0	1.597	2703.6	1216.9	94.76	0.875
<b>125</b>	137500	144770.3	231.681	2117.7	1.304	1837.7	888.6	94.98	0.869
<b>100</b>	110000	115514.2	187.084	1380.9	0.998	1121.1	580.7	95.23	0.859
<b>75</b>	82500	86765.3	147.293	856.0	0.724	609.3	361.9	95.08	0.820
<b>50</b>	55000	58403.3	111.730	492.5	0.496	278.5	207.1	94.17	0.727
<b>25</b>	27500	30396.0	84.164	279.5	0.257	72.8	117.6	90.47	0.502

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## ROYCE CROSS GROUP

Type	Y3-315L1-6	Poles	6	output Power	110.0	<b>kW</b>		
Voltage	415	<b>V</b>	Current	187	<b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	990	<b>r/min</b>	Duty	S1	Connection			
Ins. class	F	Weight	0	<b>kg</b>			IP56	

### Load Curve

