



**ROYCECROSSGROUP**



**ROYCE CROSS GROUP**

**ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR**

<b>NAMEPLATE DATA</b>			
Y3-132S-4 <b>FRAME</b>	IEC TYPE	5.5 kW	1460 r/min
4 <b>POLE</b>	3 <b>PHASE</b>	415 <b>VOLTS</b>	50 Hz
<b>ROYCE CROSS GROUP MANUFACTURER</b>	10.1 <b>AMPS</b>	IP55 <b>IP</b>	
	S1 <b>DUTY</b>	F <b>INS.CLASS</b>	<b>CONNECTION</b>

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	2.64457
NO LOAD CURRENT	AMP	3.97
NO LOAD INPUT	W	230.1
CORE LOSS(Pfe)	W	131.4
WINDAGE FRICTION LOSS(Pfw)	W	57.6
STATOR WINDING LOSS(Pcu1)	W	270.6
ROTOR WINDING LOSS(Pcu2)	W	153.5
STRAY LOAD LOSS(Ps)	W	31.4
FULL LOAD CURRENT	AMP	10.19
LOCKED ROTOR CURRENT	AMP	67.18
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.65
FULL LOAD TORQUE	N.m	35.97
LOCKED ROTOR TORQUE	N.m	79.44
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.21
PULL OUT TORQUE	N.m	106.99
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.97
INPUT @ FULL LOAD	kW	6.14
EFFICIENCY @ FULL LOAD	%	89.51
POWER FACTOR @ FULL LOAD		0.84
FULL LOAD SLIP	%	2.673
FULL LOAD SPEED	r/min	1459.9
STATOR WINDING TEMPERATURE RISE	K	63
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	57.3
AMBIENT TEMPERATURE OF TESTING	Deg. C	26.1
NOISE	dB(A)	61
VIBRATION	mm/s	0.7

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	Y3-132S-4		Poles	4		Power	5.5 kW
Voltage	415 V		Current	10.1 A		Frequency	50 Hz
Speed	1460 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.	
504.4	1	50	3.889	3.850	3.889	2	-948.4	1233.5	2	90.6
463.6	1	50	2.791	2.772	2.826	2	-623.2	802.3	2	90.6
415.4	1	50	1.990	1.985	2.002	2	-404.1	519.6	2	90.5
372.3	1	50	1.575	1.561	1.574	2	-279.3	372.5	2	90.5
336.2	1	50	1.333	1.317	1.336	2	-208.5	285.6	2	90.4
291.7	1	50	1.098	1.081	1.102	2	-140.4	210.7	2	90.1
207.3	1	50	0.738	0.740	0.744	2	-57.4	111.8	2	89.9
169.7	1	50	0.599	0.588	0.594	2	-31.5	77.0	2	89.7
130.2	1	50	0.459	0.470	0.467	2	-11.2	51.8	2	89.4
86.1	1	50	0.377	0.365	0.371	2	0.0	32.4	2	89.2

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Voltage	415 <b>V</b>	Current	10.1 <b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	1460 <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.	Torqure N. m
414.9	1.0	3.360	3.345	3.368	20.0	0.0	1477.5	20	79.38
387.9	1.0	3.039	3.027	3.065	20.0	-8.6	1244.1	20	65.66
342.2	1.0	2.555	2.531	2.572	20.0	-15.5	911.7	20	47.04
297.6	1.0	2.101	2.076	2.122	20.0	-21.2	644.7	20	33.32
252.4	1.0	1.674	1.641	1.685	20.0	-23.8	426.3	20	21.56
210.6	1.0	1.296	1.270	1.310	20.0	-23.7	270.7	20	13.72
165.0	1.0	0.927	0.907	0.932	20.0	-19.2	148.0	20	7.84
114.2	1.0	0.568	0.561	0.572	20.0	-11.3	61.6	20	2.94

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

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### ROYCE CROSS GROUP

Type	Y3-132S-4		Poles	4		Power	5.5	kW	
Voltage	415	V	Current	10.1	A	Frequency	50	Hz	
Speed	1460	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	
10:00	414.9	2.052	2.048	2.064	5	379.3	863.6	5	60.5	—	100.9	97.2	—	—	—	—	—	—	—	—	—	25.3
10:30	414.8	2.040	2.048	2.059	5	375.7	863.0	5	60.4	—	98.9	95.4	—	—	—	—	—	—	—	—	—	25.3
11:00	414.7	2.054	2.062	2.064	5	375.4	869.9	5	59.6	—	98.0	94.5	—	—	—	—	—	—	—	—	—	26.5
11:30	414.8	2.042	2.047	2.051	5	374.2	862.1	5	58.8	—	97.5	94.0	—	—	—	—	—	—	—	—	—	26.0
12:00	414.5	2.047	2.049	2.067	5	377.8	863.3	5	58.2	—	97.2	93.7	—	—	—	—	—	—	—	—	—	26.0
12:30	414.7	2.037	2.046	2.053	5	371.1	863.0	5	57.8	—	96.9	93.4	—	—	—	—	—	—	—	—	—	26.2
13:00	414.9	2.054	2.049	2.058	5	378.2	863.0	5	57.3	—	96.6	93.1	—	—	—	—	—	—	—	—	—	26.0
最后三点平均值	10.256		A		6194		W		57.3	—	96.9	93.4	—	—	—	—	—	—	—	—	—	26.1

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)	41	67	86	113	154	203		
RESISTANCE	1.7351	1.7291	1.7261	1.7201	1.7141	1.7081		

#### WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	1.388	1.388	1.388	1.38800	1.38800	24.8 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	0	0	0	0.000	0	0 °C

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Voltage	415	<b>V</b>	Current	10.1	<b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	1460	<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
415.2	49.99	2.819	2.814	2.835	5	573.7	1190.4	5	1440.6
415.3	49.99	2.454	2.456	2.464	5	483.5	1037.4	5	1449.1
415.2	50.01	2.053	2.049	2.068	5	377.9	865.5	5	1459.6
415.4	50.01	1.707	1.711	1.725	5	276.0	717.4	5	1467.7
414.9	50.01	1.406	1.398	1.406	5	172.4	575.0	5	1475.3
415.1	50.01	1.144	1.142	1.155	5	68.4	446.3	5	1482.3
415.4	50.01	1.013	1.017	1.022	5	0.0	369.6	5	1486.5

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
<b>150</b>	8250	9467.9	15.069	592.4	4.223	368.8	67.8	87.14	0.874
<b>125</b>	6875	7770.6	12.540	410.2	3.441	248.8	47.6	88.47	0.862
<b>100</b>	5500	6144.5	10.185	270.6	2.673	153.5	31.4	89.51	0.839
<b>75</b>	4125	4591.5	8.101	171.2	2.013	86.4	20.0	89.84	0.789
<b>50</b>	2750	3095.3	6.313	104.0	1.405	40.2	12.2	88.84	0.682
<b>25</b>	1375	1646.2	4.907	62.8	0.839	12.2	7.2	83.53	0.467

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Speed	1460 <b>r/min</b>	Duty	S1	Connection		
Ins. class	F	Weight	0 <b>kg</b>		IP55	

### Load Curve

