



**ROYCECROSSGROUP**



**ROYCE CROSS GROUP**

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

<b>NAMEPLATE DATA</b>			
Y3-225S-4 <b>FRAME</b>	IEC TYPE	37 kW	1481 r/min
4 <b>POLE</b>	3 <b>PHASE</b>	415 <b>VOLTS</b>	50 Hz
<b>ROYCE CROSS GROUP MANUFACTURER</b>	63.0 <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	0.23207
NO LOAD CURRENT	AMP	21.02
NO LOAD INPUT	W	864.7
CORE LOSS(Pfe)	W	646.9
WINDAGE FRICTION LOSS(Pfw)	W	121.2
STATOR WINDING LOSS(Pcu1)	W	906.3
ROTOR WINDING LOSS(Pcu2)	W	629.0
STRAY LOAD LOSS(Ps)	W	196.1
FULL LOAD CURRENT	AMP	62.70
LOCKED ROTOR CURRENT	AMP	412.08
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.54
FULL LOAD TORQUE	N.m	239.51
LOCKED ROTOR TORQUE	N.m	492.37
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.06
PULL OUT TORQUE	N.m	634.90
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.66
INPUT @ FULL LOAD	kW	39.50
EFFICIENCY @ FULL LOAD	%	93.67
POWER FACTOR @ FULL LOAD		0.88
FULL LOAD SLIP	%	1.657
FULL LOAD SPEED	r/min	1475.1
STATOR WINDING TEMPERATURE RISE	K	65
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	59.4
AMBIENT TEMPERATURE OF TESTING	Deg. C	23.4
NOISE	dB(A)	79
VIBRATION	mm/s	1.3

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

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



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Type	Y3-225S-4	Poles	4	Power	37.0	<b>kW</b>
Voltage	415 <b>V</b>	Current	63 <b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	1481 <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
411.5	1.0	2.035	2.037	2.044	200.0	-90.4	673.9	200	483.28
362.7	1.0	1.731	1.732	1.736	200.0	-71.9	502.7	200	356.37
317.7	1.0	2.948	2.942	2.957	100.0	-117.3	746.0	100	267.02
266.5	1.0	2.352	2.351	2.357	100.0	-85.1	494.3	100	173.62
224.2	1.0	1.896	1.894	1.898	100.0	-62.1	331.6	100	115.74
183.8	1.0	1.487	1.484	1.487	100.0	-43.5	211.2	100	73.10
142.7	1.0	2.209	2.205	2.210	50.0	-55.1	240.7	50	40.61
106.8	1.0	1.603	1.602	1.603	50.0	-31.1	129.6	50	21.32

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

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### ROYCE CROSS GROUP

Type	Y3-225S-4			Poles	4		Power	37 kW	
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Speed	1481 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	415.0	3.168	3.170	3.172	20	726.3	1233.0	20	50.6	—	80.7	—	—	—	—	—	—	—	—	—	—	22.1
11:00	415.1	3.161	3.163	3.163	20	724.4	1225.9	20	54.7	—	87.0	—	—	—	—	—	—	—	—	—	—	22.4
11:30	415.2	3.132	3.134	3.132	20	719.1	1218.2	20	56.6	—	87.4	—	—	—	—	—	—	—	—	—	—	22.8
12:00	415.1	3.139	3.143	3.141	20	721.3	1220.7	20	57.4	—	88.5	—	—	—	—	—	—	—	—	—	—	23.1
12:30	415.2	3.148	3.150	3.150	20	719.4	1221.8	20	58.3	—	90.0	—	—	—	—	—	—	—	—	—	—	23.3
13:00	415.3	3.139	3.141	3.141	20	716.9	1215.9	20	58.8	—	90.9	—	—	—	—	—	—	—	—	—	—	23.4
13:30	415.1	3.163	3.166	3.166	20	729.6	1231.6	20	59.2	—	91.7	—	—	—	—	—	—	—	—	—	—	23.4
14:00	415.2	3.163	3.166	3.166	20	730.1	1231.1	20	59.4	—	91.4	—	—	—	—	—	—	—	—	—	—	23.4
最后三点平均值		63.133			A	39035.08		W	59.4	—	91.3	—	—	—	—	—	—	—	—	—	—	23.4

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)	45	78	101	135	162	195	233	269
RESISTANCE	0.1517	0.1508	0.1503	0.1496	0.1490	0.1484	0.1478	0.1473

#### WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.1203	0.1203	0.1203	0.12030	0.12030	21.6 °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	Y3-225S-4	Poles	4	output Power	37.0	<b>kW</b>		
Voltage	415	<b>V</b>	Current	63	<b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	1481	<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
415.1	50.01	1.961	1.964	1.966	50	398.0	827.5	50	1461.3
415.2	50.01	1.601	1.603	1.603	50	334.8	677.8	50	1468.8
415.1	50.01	1.264	1.265	1.265	50	261.5	535.9	50	1475.3
415.0	50.00	2.415	2.427	2.416	20	450.7	1021.9	20	1481.2
415.1	50.01	1.755	1.766	1.754	20	238.9	731.3	20	1486.4
415.2	50.00	1.548	1.558	1.547	20	159.6	633.9	20	1488.2
415.0	50.00	1.264	1.269	1.262	20	31.7	479.4	20	1491.0

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
<b>150</b>	55500	60370.3	96.668	2154.4	2.573	1481.2	466.6	91.93	0.869
<b>125</b>	46250	49733.9	78.571	1423.3	2.071	986.7	305.9	92.99	0.881
<b>100</b>	37000	39499.5	62.699	906.3	1.657	629.0	196.1	93.67	0.876
<b>75</b>	27750	29535.2	48.505	542.4	1.261	357.5	117.3	93.96	0.847
<b>50</b>	18500	19802.2	35.628	292.6	0.946	178.4	63.1	93.42	0.773
<b>25</b>	9250	10255.1	25.334	148.0	0.604	57.1	32.0	90.20	0.563

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### Load Curve

