

# ROYCE CROSS GROUP

## ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

<b>NAMEPLATE DATA</b>			
YE2-250SM-4 <b>FRAME</b>	IEC TYPE	75 kW	1485 r/min
4 <b>POLE</b>	3 <b>PHASE</b>	415 <b>VOLTS</b>	50 Hz
ROYCE CROSS GROUP <b>MANUFACTURER</b>	127.6 <b>AMPS</b>	IP55 <b>IP</b>	
	S1 <b>DUTY</b>	F <b>INS.CLASS</b>	Δ <b>CONNECTION</b>

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	0.07864
NO LOAD CURRENT	AMP	38.627
NO LOAD INPUT	W	1826.5
CORE LOSS(Pfe)	W	924.2
WINDAGE FRICTION LOSS(Pfw)	W	788.2
STATOR WINDING LOSS(Pcu1)	W	1274.2
ROTOR WINDING LOSS(Pcu2)	W	993.7
STRAY LOAD LOSS(Ps)	W	608.9
FULL LOAD CURRENT	AMP	127.40
LOCKED ROTOR CURRENT	AMP	794.25
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.22
FULL LOAD TORQUE	N.m	483.66
LOCKED ROTOR TORQUE	N.m	945.15
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	1.96
PULL OUT TORQUE	N.m	1301.63
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.70
INPUT @ FULL LOAD	kW	79.59
EFFICIENCY @ FULL LOAD	%	94.23
POWER FACTOR @ FULL LOAD		0.869
FULL LOAD SLIP	%	1.284
FULL LOAD SPEED	r/min	1480.7
STATOR WINDING TEMPERATURE RISE	K	66
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	52.1
AMBIENT TEMPERATURE OF TESTING	Deg. C	25.8
NOISE	dB(A)	76
VIBRATION	mm/s	0.7

<b>ROYCE CROSS GROUP</b>  YE2-250SM-4 75 kW 415 VOLTS 50 Hz	SERIAL NO.		
	DATE		REV
	DRAWN		DOCUMENT NO.
	APPRVD		
	CHECKED		

# ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

## ROYCE CROSS GROUP

Type	YE2-250SM-4	Poles	4	Power	75.0 kW
Voltage	415 V	Current	127.6 A	Frequency	50 Hz
Speed	1485 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.	℃
492.9	1	50	2.958	2.890	2.836	20	-527.5	652.0	20	85.9
454.0	1	50	2.343	2.287	2.230	20	-380.1	483.8	20	85.7
414.9	1	50	1.977	1.933	1.882	20	-287.4	378.7	20	85.6
365.8	1	50	3.349	3.276	3.195	10	-419.2	574.0	10	85.3
316.9	1	50	2.828	2.771	2.698	10	-293.9	431.7	10	85.1
255.5	1	50	2.240	2.198	2.138	10	-170.6	289.9	10	84.8
206.8	1	50	1.826	1.797	1.747	10	-98.3	202.4	10	84.3
184.1	1	50	3.308	3.262	3.203	5	-139.8	337.9	5	84.1
142.6	1	50	2.659	2.636	2.583	5	-46.9	233.5	5	83.8
98.4	1	50	2.161	2.159	2.117	5	13.0	154.3	5	83.6

<b>ROYCE CROSS GROUP</b>	Manufacturing Date	Serial No
	Test Date	Report Number

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## ROYCE CROSS GROUP

Type	YE2-250SM-4	Poles	4	Power	75.0	<b>kW</b>
Voltage	415 <b>V</b>	Current	127.6 <b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	1485 <b>r/min</b>	Duty	S1	Connection	Δ	
Ins. class	F	Weight	0 <b>kg</b>		IP55	

### LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu N. m
322.6	1.0	2.877	2.887	2.898	200.0	-149.8	766.4	200	499.58
289.2	1.0	2.526	2.534	2.547	200.0	-122.9	598.6	200	391.05
255.1	1.0	2.177	2.183	2.189	200.0	-99.0	451.5	200	292.86
222.4	1.0	3.697	3.696	3.709	100.0	-156.4	664.2	100	214.47
182.1	1.0	2.900	2.919	2.931	100.0	-102.5	422.6	100	141.26
145.9	1.0	2.257	2.260	2.268	100.0	-70.0	260.7	100	80.97
104.9	1.0	1.622	1.624	1.628	100.0	-38.2	137.3	100	42.21

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# ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

## ROYCE CROSS GROUP

Type	YE2-250SM-4			Poles	4			Power	75 kW		
Voltage	415 V			Current	127.6 A			Frequency	50 Hz		
Speed	1485 r/min			Duty	S1			Connection	Δ		
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	2.540	2.567	2.544	50	553.8	1037.2	50	54.8	—	91.9	92.2	—	—	—	—	—	—	—	—	65.9	24.1
11:00	415.0	2.569	2.593	2.570	50	557.9	1047.4	50	55.0	—	95.0	95.3	—	—	—	—	—	—	—	—	66.6	24.5
11:30	415.1	2.531	2.557	2.533	50	552.7	1033.2	50	55.4	—	96.4	96.7	—	—	—	—	—	—	—	—	66.8	24.9
12:00	415.1	2.548	2.573	2.548	50	558.2	1039.3	50	54.2	—	97.2	97.5	—	—	—	—	—	—	—	—	78.5	25.1
12:30	415.2	2.539	2.562	2.539	50	556.2	1035.7	50	53.0	—	97.5	97.8	—	—	—	—	—	—	—	—	51.6	25.2
13:00	415.2	2.555	2.581	2.558	50	558.8	1042.9	50	52.5	—	98.3	98.7	—	—	—	—	—	—	—	—	36.8	25.6
13:30	415.2	2.541	2.564	2.542	50	556.5	1036.7	50	52.3	—	98.8	99.2	—	—	—	—	—	—	—	—	33.7	25.8
14:00	415.3	2.525	2.550	2.527	50	551.4	1031.5	50	52.1	—	98.9	99.2	—	—	—	—	—	—	—	—	32.6	25.9
最后三点平均值	127.459		A		79631		W		52.1	—	98.7	99.0	—	—	—	—	—	—	—	—	32.6	25.8

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)	44	66	88	105	129	148	171	195
RESISTANCE	0.05213	0.05198	0.05185	0.05174	0.05162	0.05152	0.05143	0.05133

#### WINDING RESISTANCE (COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.04099	0.04098	0.04095	0.04097	0.04095	22.9 °C

## ROYCE CROSS GROUP

Manu. Date

Serial No

Test Date

Report Number

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

**ROYCE CROSS GROUP**

Type	YE2-250SM-4	Poles	4	Power	75.0	<b>kW</b>
Voltage	415 V	Current	127.6 A	Frequency	50.0	<b>Hz</b>
Speed	1485 r/min	Duty	S1	Connection	Δ	
Ins. class	F	Weight	0 kg		IP55	

**LOAD TEST**

V	HZ	I1	I2	I3	mul.	W1	W2	mul.	r/min	Temperature °C	Torqur N.m
415.2	50.00	3.684	3.706	3.689	50	778.5	1504.8	50	1470.4	97.4	689.1
415.1	50.00	3.203	3.225	3.205	50	693.4	1307.0	50	1475.0	98.5	606.1
415.0	50.00	2.532	2.554	2.530	50	550.9	1035.2	50	1480.8	98.8	481.1
415.1	50.00	1.937	1.955	1.928	50	398.4	791.8	50	1486.3	97.9	360.0
415.1	50.00	1.367	1.383	1.355	50	237.7	558.6	50	1491.6	96.2	237.7
415.0	50.00	2.232	2.232	2.162	20	166.5	864.5	20	1496.0	94.7	118.1

Final Resistance of load: 0.00000 Ω ambient temperature 0.0 °C

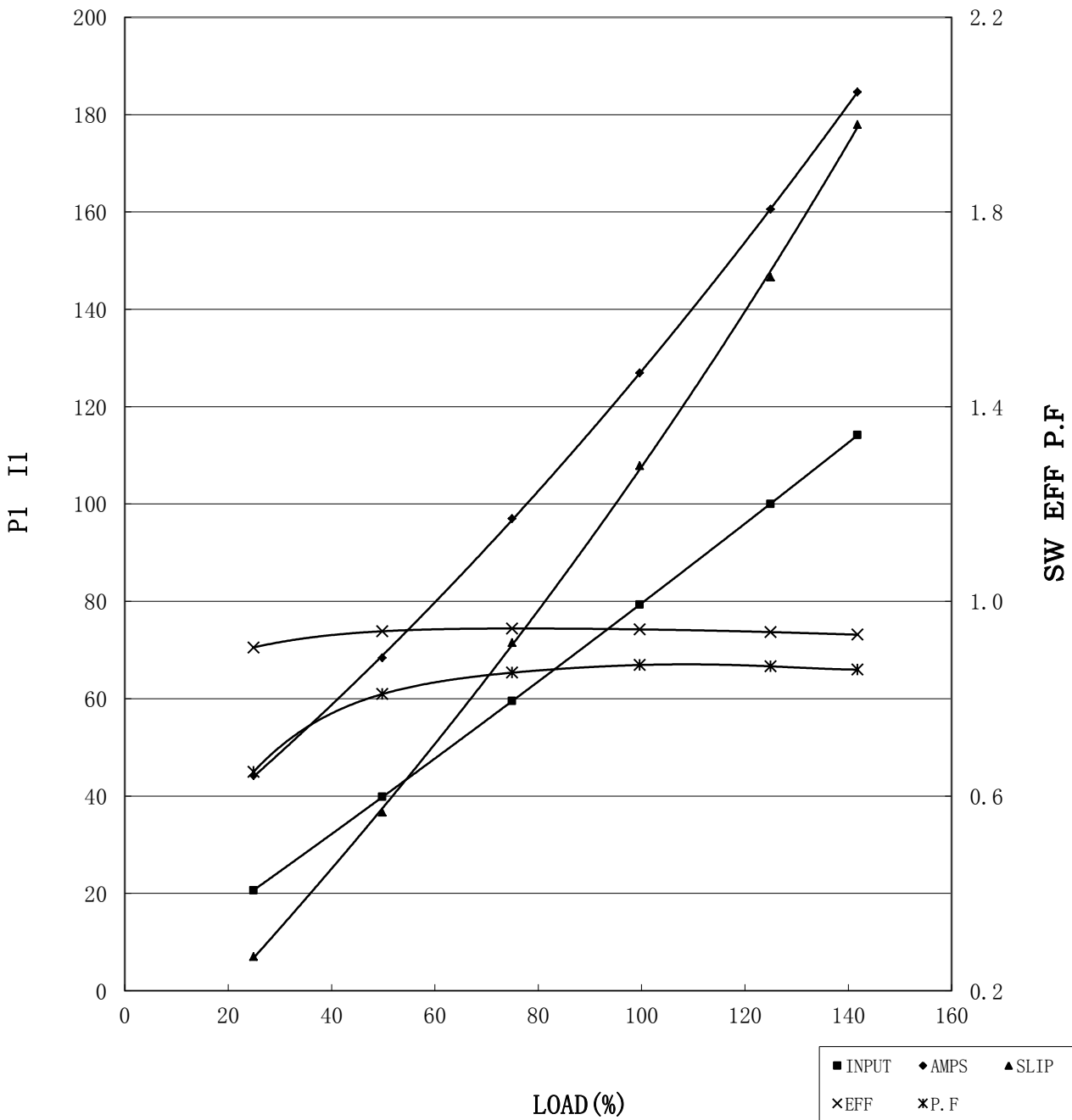
LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pfe W	EFF %	P.F
150.0	112500	196.4	121048.7	3027.5	2.132	2496.6	1393.9	869.0	92.94	0.858
125.0	93750	160.6	100065.8	2025.6	1.667	1619.1	958.8	877.6	93.69	0.867
100.0	75000	127.4	79591.7	1274.2	1.284	993.7	608.9	886.6	94.23	0.869
75.0	56250	97.1	59571.1	739.8	0.916	530.4	340.0	896.6	94.42	0.854
50.0	37500	68.6	39951.9	369.6	0.569	220.0	150.0	906.0	93.86	0.810
25.0	18750	44.3	20707.1	153.9	0.271	53.2	37.3	914.5	90.55	0.651

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Type	YE2-250SM-4	Poles	4	output Power	75.0	kW
Voltage	415 V	Current	127.6 A	Frequency	50.0	Hz
Speed	1485 r/min	Duty	S1	Connection	Δ	
Ins. class	F	Weight	0 kg		IP55	

## LOAD CURVE



# ELECTRIC MOTOR TEST REPORT – THREE PHASE INDUCTION MOTOR

Type	YE2-250SM-4	Poles	4	output Power	75.0	<b>kW</b>		
Voltage	415	<b>V</b>	Current	127.6	<b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	1485	<b>r/min</b>	Duty	S1	Connection	Δ		
Ins. class	F	Weight	0	<b>kg</b>	IP55			

### TORQUE&CURRENT VS SPEED

