

# ROYCE CROSS GROUP

## ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

**NAMEPLATE DATA**

IEC TYPE	75 kW	2975 r/min
YE2-250M-2 FRAME	3 PHASE	415 VOLTS
2 POLE	125.0 AMPS	IP55 IP
ROYCE CROSS GROUP MANUFACTURER	S1 DUTY	F INS.CLASS
		50 Hz
		Δ CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	0.07567
NO LOAD CURRENT	AMP	31.18
NO LOAD INPUT	W	2468.9
CORE LOSS(Pfe)	W	1379.7
WINDAGE FRICTION LOSS(Pfw)	W	1021.4
STATOR WINDING LOSS(Pcu1)	W	1104.8
ROTOR WINDING LOSS(Pcu2)	W	713.4
STRAY LOAD LOSS(Ps)	W	764
FULL LOAD CURRENT	AMP	124.16
LOCKED ROTOR CURRENT	AMP	844.86
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.76
FULL LOAD TORQUE	N.m	240.94
LOCKED ROTOR TORQUE	N.m	531.78
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.21
PULL OUT TORQUE	N.m	708.59
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.94
INPUT @ FULL LOAD	kW	79.95
EFFICIENCY @ FULL LOAD	%	93.81
POWER FACTOR @ FULL LOAD		0.90
FULL LOAD SLIP	%	0.921
FULL LOAD SPEED	r/min	2972.4
STATOR WINDING TEMPERATURE RISE	K	61
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	54.9
AMBIENT TEMPERATURE OF TESTING	Deg. C	15.2
HIGH VOLTAGE TEST	V	1830
INSULATION RESISTANCE	MΩ	500
NOISE	dB(A)	83
VIBRATION	mm/s	1.3

<b>ROYCE CROSS GROUP</b>  YE2-250M-2 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	YE2-250M-2	Poles	2	Power	75.0 kW
Voltage	415 V	Current	125 A	Frequency	50 Hz
Speed	2975 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.	℃
475.0	1	50	2.486	2.461	2.548	20	-659.2	850.0	20	67.6
440.3	1	50	1.849	1.824	1.886	20	-448.9	590.8	20	67.6
415.5	1	50	1.559	1.542	1.586	20	-354.1	477.8	20	67.3
359.8	1	50	2.415	2.373	2.428	10	-461.4	659.5	10	67.1
314.6	1	50	2.020	1.984	2.024	10	-322.1	497.4	10	66.7
253.2	1	50	1.592	1.560	1.592	10	-182.0	333.2	10	66.4
206.8	1	50	2.622	2.605	2.659	5	-211.5	477.1	5	66.2
184.7	1	50	2.353	2.343	2.388	5	-147.6	399.9	5	66.0
144.8	1	50	1.919	1.902	1.943	5	-45.0	280.9	5	65.7
108.2	1	50	1.611	1.600	1.625	5	15.7	204.7	5	65.4

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	Test Date	Report Number

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## ROYCE CROSS GROUP

Type	YE2-250M-2	Poles	2	Power	75.0	<b>kW</b>
Voltage	415 <b>V</b>	Current	125 <b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	2975 <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
335.3	1.0	3.240	3.248	3.281	200.0	-199.5	948.5	200	315.99
302.6	1.0	2.856	2.859	2.890	200.0	-158.9	755.4	200	256.77
268.8	1.0	2.470	2.472	2.495	200.0	-123.0	579.1	200	198.39
229.1	1.0	2.039	2.041	2.055	200.0	-88.2	406.7	200	137.90
196.2	1.0	1.708	1.710	1.720	200.0	-65.0	291.5	200	103.21
174.1	1.0	2.995	2.999	3.021	100.0	-101.7	451.7	100	78.68
145.1	1.0	2.460	2.460	2.472	100.0	-70.8	308.9	100	53.72
116.7	1.0	3.917	3.915	3.941	50.0	-93.1	394.5	50	35.77

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# ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

## ROYCE CROSS GROUP

Type	YE2-250M-2		Poles	2		Power	75 kW	
Voltage	415 V		Current	125 A		Frequency	50 Hz	
Speed	2975 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
11:30	415.1	2.503	2.497	2.518	50	560.1	1042.6	50	49.6	—	64.5	—	—	—	—	—	—	—	40.3	—	14.4
12:00	415.1	2.491	2.482	2.507	50	555.7	1035.5	50	53.5	—	69.4	—	—	—	—	—	—	—	45.4	—	14.6
12:30	415.2	2.522	2.512	2.537	50	563.3	1049.6	50	54.6	—	73.1	—	—	—	—	—	—	—	48.9	—	14.9
13:00	415.1	2.477	2.468	2.493	50	548.4	1029.7	50	54.9	—	75.6	—	—	—	—	—	—	—	49.9	—	15.1
13:30	414.9	2.511	2.502	2.527	50	558.9	1044.4	50	54.7	—	76.1	—	—	—	—	—	—	—	50.4	—	15.2
14:00	415.0	2.496	2.487	2.512	50	554.6	1037.9	50	54.9	—	76.5	—	—	—	—	—	—	—	50.7	—	15.2
最后三点平均值		124.864			A	79564.33		W	54.9	—	76.5	—	—	—	—	—	—	—	50.7	—	15.2

T1 T2: DE BEARING TEMPERATURE      T9: AIR INLET TEMPERATURE      T11: CORE TEMPERATRE      T12: FRAME TEMPERATRE  
 T3~8: DE WINDING TEMPERATURE      T10: AIR OUTLET TEMPERATURE      T13: AMBIENT TEMPERATURE

#### WINDING RESISTANCE (HOT) AT END OF TEMPERATURE RISE TEST

TIME (S)	48	68	88	108	128	148	168	188
RESISTANCE	0.04782	0.04774	0.04768	0.04761	0.04754	0.04748	0.04742	0.0474

#### WINDING RESISTANCE (COLD)

	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.03689	0.03695	0.03692	0.03692	0.03689	6.5 °C

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

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

**ROYCE CROSS GROUP**

Type	YE2-250M-2	Poles	2	Power	75.0	<b>kW</b>
Voltage	415 V	Current	125 A	Frequency	50.0	<b>Hz</b>
Speed	2975 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	3.638	3.625	3.662	50	825.2	1527.3	50	2958.6	75.2	354.1
415.2	50.00	3.083	3.076	3.108	50	707.6	1296.3	50	2965.8	75.4	302.1
415.3	50.00	2.487	2.477	2.502	50	558.6	1043.6	50	2973.3	75.3	241.2
415.1	50.00	1.922	1.911	1.929	50	402.1	801.2	50	2980.1	74.9	180.5
415.2	50.00	1.433	1.426	1.454	50	268.3	574.2	50	2984.9	74.3	124.8
415.0	49.99	2.463	2.428	2.465	20	136.6	942.8	20	2989.9	73.9	60.4

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

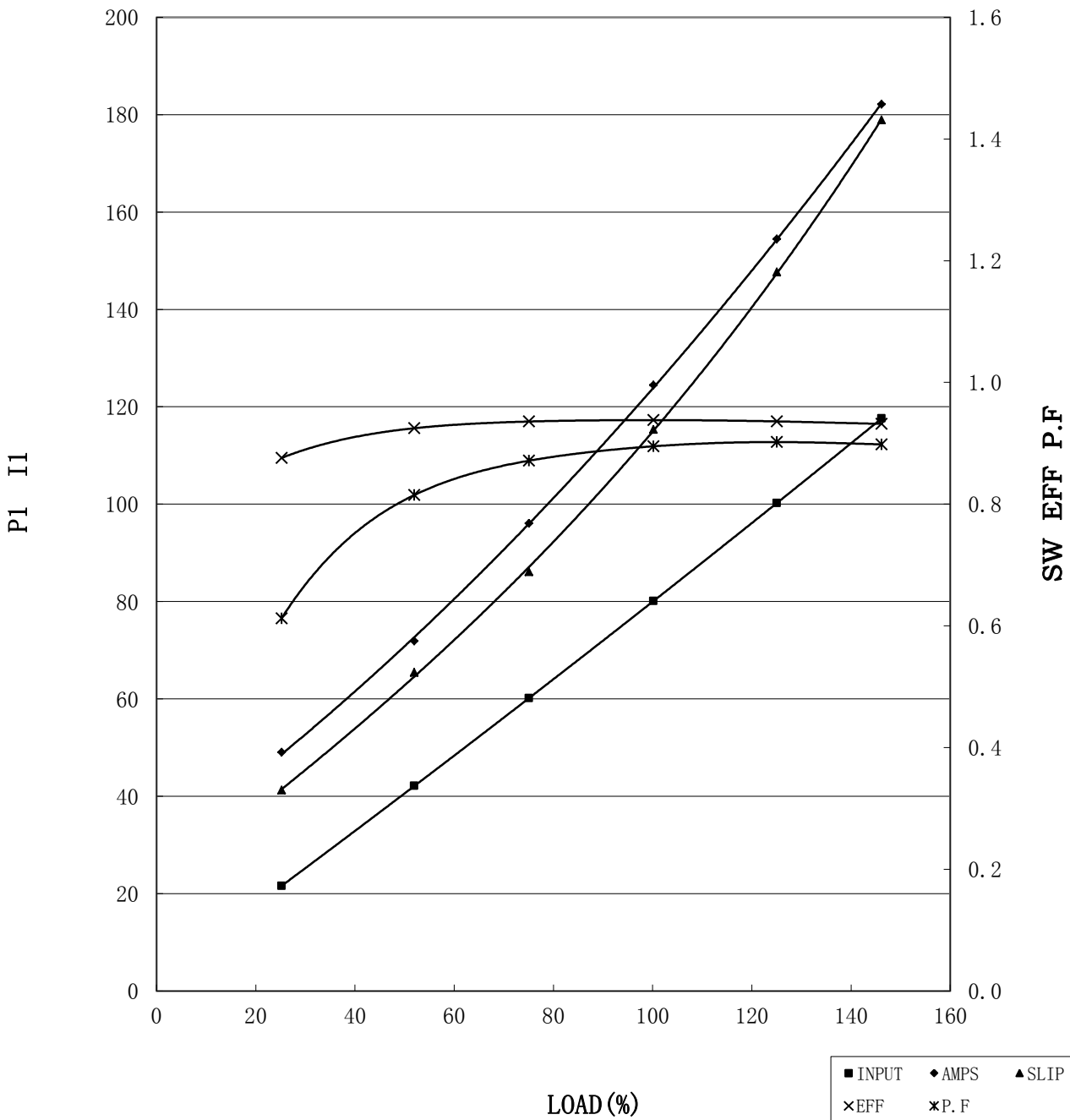
LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pfe W	EFF %	P.F
150.0	112500	187.1	120791.7	2509.4	1.482	1733.2	1738.7	1324.8	93.12	0.898
125.0	93750	154.4	100160.1	1708.7	1.181	1147.0	1200.1	1334.6	93.60	0.902
100.0	75000	124.2	79948.0	1104.8	0.921	713.4	764.0	1345.1	93.81	0.896
75.0	56250	95.9	60111.1	659.7	0.688	399.7	427.8	1352.9	93.58	0.872
50.0	37500	69.9	40634.0	350.3	0.506	197.0	189.4	1362.9	92.12	0.809
25.0	18750	48.9	21423.9	171.3	0.329	65.3	47.2	1370.4	87.56	0.610

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# ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	YE2-250M-2	Poles	2	output Power	75.0	kW		
Voltage	415	V	Current	125	A	Frequency	50.0	Hz
Speed	2975	r/min	Duty	S1	Connection	Δ		
Ins. class	F	Weight	0	kg		IP55		

## LOAD CURVE



# ELECTRIC MOTOR TEST REPORT – THREE PHASE INDUCTION MOTOR

Type	YE2-250M-2	Poles	2	output Power	75.0	<b>kW</b>		
Voltage	415	<b>V</b>	Current	125	<b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	2975	<b>r/min</b>	Duty	S1	Connection	Δ		
Ins. class	F	Weight	0	<b>kg</b>	IP55			

### TORQUE&CURRENT VS SPEED

