

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA		IE4	
K160L-2 FRAME	IEC TYPE	18,5 kW	2940 r/min
2 POLE	3 PHASE	400 VOLTS	50 Hz
VALIADIS MANUFACTURER	32,0 AMPS	IP55 IP	
	S1 DUTY	F INS.CLASS	Δ CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	0,31360
NO LOAD CURRENT	AMP	7,965
NO LOAD INPUT	W	415,1
CORE LOSS(Pfe)	W	306,1
WINDAGE FRICTION LOSS(Pfw)	W	91,5
STATOR WINDING LOSS(Pcu1)	W	284,9
ROTOR WINDING LOSS(Pcu2)	W	253,5
STRAY LOAD LOSS(Ps)	W	285,7
FULL LOAD CURRENT	AMP	31,23
LOCKED ROTOR CURRENT	AMP	285,01
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	8,91
FULL LOAD TORQUE	N.m	59,68
LOCKED ROTOR TORQUE	N.m	150,48
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2,50
PULL OUT TORQUE	N.m	207,97
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	3,46
INPUT @ FULL LOAD	kW	19,72
EFFICIENCY @ FULL LOAD	%	93,81
POWER FACTOR @ FULL LOAD		0,912
FULL LOAD SLIP	%	1,324
FULL LOAD SPEED	r/min	2960,3
STATOR WINDING TEMPERATURE RISE	K	45
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	30,2
AMBIENT TEMPERATURE OF TESTING	Deg. C	16,9
NOISE	dB(A)	78
VIBRATION	mm/s	1,5

VALIADIS S.A. K160L-2 18,5 kW 400 VOLTS 50 Hz	SERIAL NO.		
	DATE		REV
	DRAWN		DOCUMENT NO.
	APPRVD		
	CHECKED		

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Speed	2940 r/min	Duty	S1	Connection	Δ
Ins.class	F	Weight	kg		IP55

IE4

NO LOAD TEST

VOL	mul.	Hz	I01	I02	I03	mul.	W1	W2	mul.	°C
462,5	1	50	2,233	2,241	2,225	5	-480,4	597,9	5	54,4
432,3	1	50	1,855	1,865	1,855	5	-368,6	467,0	5	54,1
399,1	1	50	1,583	1,589	1,586	5	-286,4	369,0	5	53,7
388,5	1	50	1,514	1,520	1,518	5	-265,2	344,9	5	53,5
324,9	1	50	2,941	2,958	2,945	2	-422,5	569,1	2	53,1
252,2	1	50	2,193	2,205	2,195	2	-231,9	340,4	2	52,5
199,3	1	50	1,688	1,697	1,691	2	-129,3	216,7	2	52,0
166,4	1	50	1,398	1,407	1,400	2	-80,2	157,4	2	51,7
127,5	1	50	1,062	1,070	1,065	2	-35,5	99,9	2	51,4
92,7	1	50	0,799	0,804	0,801	2	-8,0	61,6	2	51,1

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Speed	2940 r/min	Duty	S1	Connection	Δ		
Ins.class	F	Weight	kg				IP55

LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu N.m
398,5	1,0	2,837	2,837	2,838	100,0	-101,6	890,8	100	149,30
340,9	1,0	2,325	2,328	2,323	100,0	-76,3	622,4	100	103,15
292,2	1,0	1,921	1,925	1,919	100,0	-59,0	438,3	100	67,87
242,3	1,0	3,051	3,058	3,054	50,0	-85,8	572,6	50	46,15
197,6	1,0	2,379	2,385	2,379	50,0	-60,9	360,9	50	28,96
149,3	1,0	1,693	1,696	1,694	50,0	-36,8	190,9	50	14,48
97,4	1,0	1,036	1,037	1,036	50,0	-16,0	74,6	50	5,43

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Ins.class	F		Weight		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	
12:00	400,1	3,186	3,212	3,203	10	740,2	1281,5	10	25,2	—	58,7	57,7	—	—	—	—	—	—	—	—	—	14,3
12:30	400,2	3,184	3,211	3,202	10	732,4	1281,1	10	25,7	—	60,8	59,8	—	—	—	—	—	—	—	—	—	14,1
13:00	400,2	3,187	3,213	3,205	10	738,6	1281,4	10	26,1	—	62,1	61,1	—	—	—	—	—	—	—	—	—	14,1
13:30	400,2	3,185	3,209	3,208	10	735,4	1281,1	10	27,1	—	62,9	61,8	—	—	—	—	—	—	—	—	—	15,2
14:00	400,2	3,201	3,226	3,218	10	739,7	1285,8	10	27,5	—	63,9	62,9	—	—	—	—	—	—	—	—	—	15,3
14:30	400,2	3,171	3,197	3,193	10	737,7	1276,1	10	28,6	—	64,7	63,6	—	—	—	—	—	—	—	—	—	16,6
15:00	399,9	3,175	3,200	3,190	10	732,6	1276,2	10	29,0	—	65,2	64,2	—	—	—	—	—	—	—	—	—	16,7
15:29	400,0	3,164	3,190	3,180	10	729,9	1272,2	10	30,2	—	65,9	64,8	—	—	—	—	—	—	—	—	—	17,3
Last three points average		31,844			A	20082,33		W	30,2	—	65,3	64,2	—	—	—	—	—	—	—	—	—	16,9

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)	55	78	94	118	140	163	186	207
RESISTANCE (Ω)	0,1886	0,1881	0,1878	0,1875	0,1872	0,1868	0,1865	0,1863

WINDING RESISTANCE(COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0,1556	0,1556	0,1559	0,15570	0,15560	10,8 °C

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Voltage	400 V	Current	32 A	Frequency	50,0	Hz	
Speed	2940 r/min	Duty	S1	Connection	Δ		
Ins.class	F	Weight	kg		IP55		

LOAD TEST

V	Hz	I1	I2	I3	mul.	W1	W2	mul.	r/min	Temperature °C	Torqure N.m
400,0	50,00	3,999	4,024	4,018	10	942,3	1601,9	10	2949,0	63,9	75,55
400,0	50,00	3,626	3,650	3,643	10	850,8	1453,5	10	2954,8	64,1	68,45
400,0	50,01	3,199	3,221	3,216	10	741,4	1284,1	10	2960,8	64,2	60,09
400,0	50,00	2,445	2,464	2,461	10	533,4	985,5	10	2971,5	64,0	44,84
400,0	50,00	1,767	1,784	1,785	10	326,4	713,3	10	2981,2	63,6	30,10
400,0	49,99	2,293	2,313	2,315	5	193,8	881,4	5	2990,9	62,2	14,46

LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pz W	EFF %	P.F
150,0	27750	47,23	29994,4	651,7	2,216	643,5	654,7	296,7	92,35	0,917
125,0	23125	39,18	24826,7	448,5	1,706	410,7	449,9	298,2	93,15	0,915
100,0	18500	31,23	19722,9	284,9	1,324	253,5	285,7	299,7	93,81	0,912
75,0	13875	23,83	14734,1	165,9	0,945	134,8	159,5	301,1	94,16	0,893
50,0	9250	16,99	9862,5	84,3	0,597	56,6	70,4	302,6	93,66	0,838
25,0	4625	11,25	5084,3	37,0	0,282	13,4	17,5	304,0	91,13	0,652

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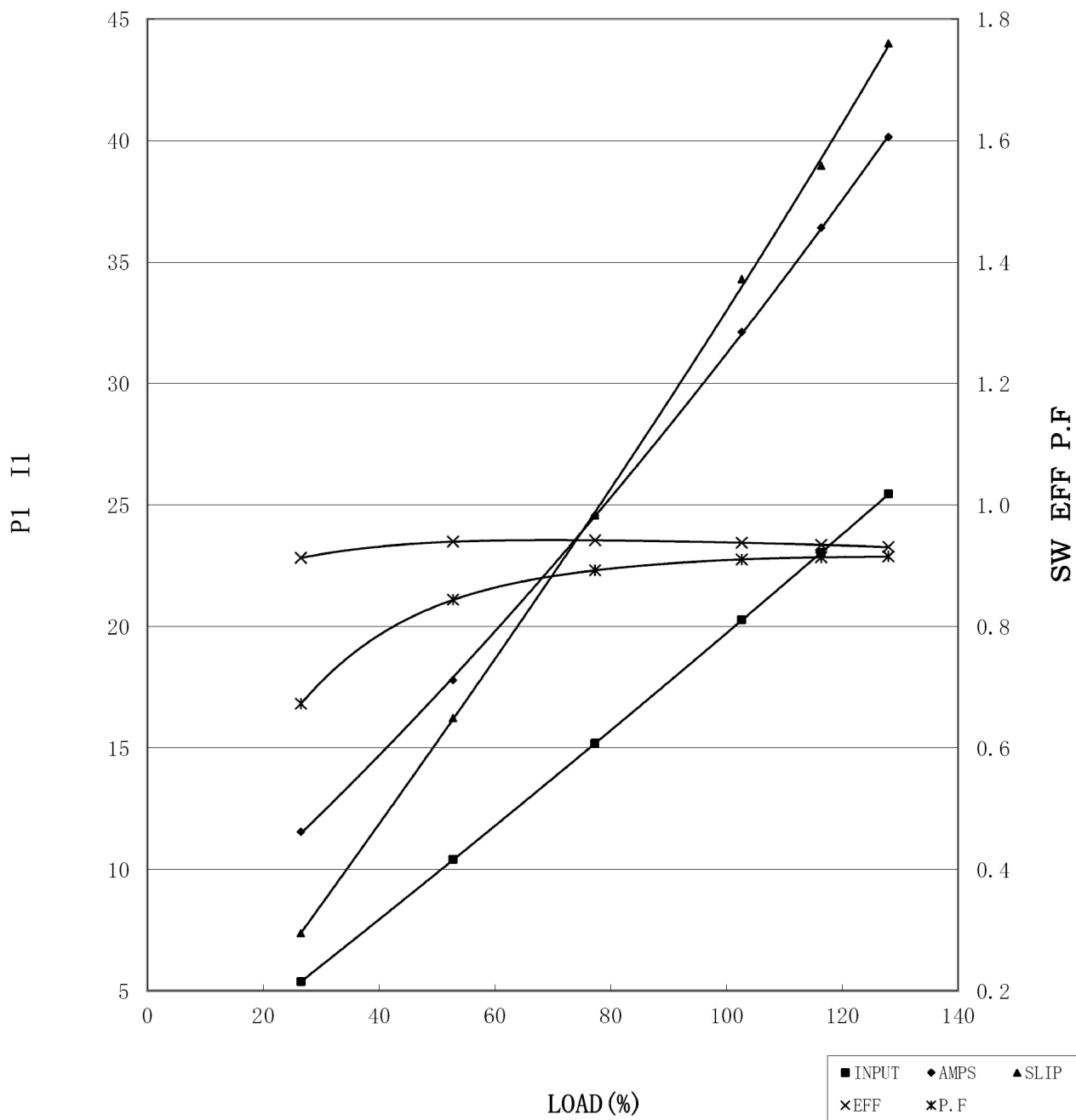
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Ins.class	F		Weight	kg		IP55		

IE4

LOAD CURVE

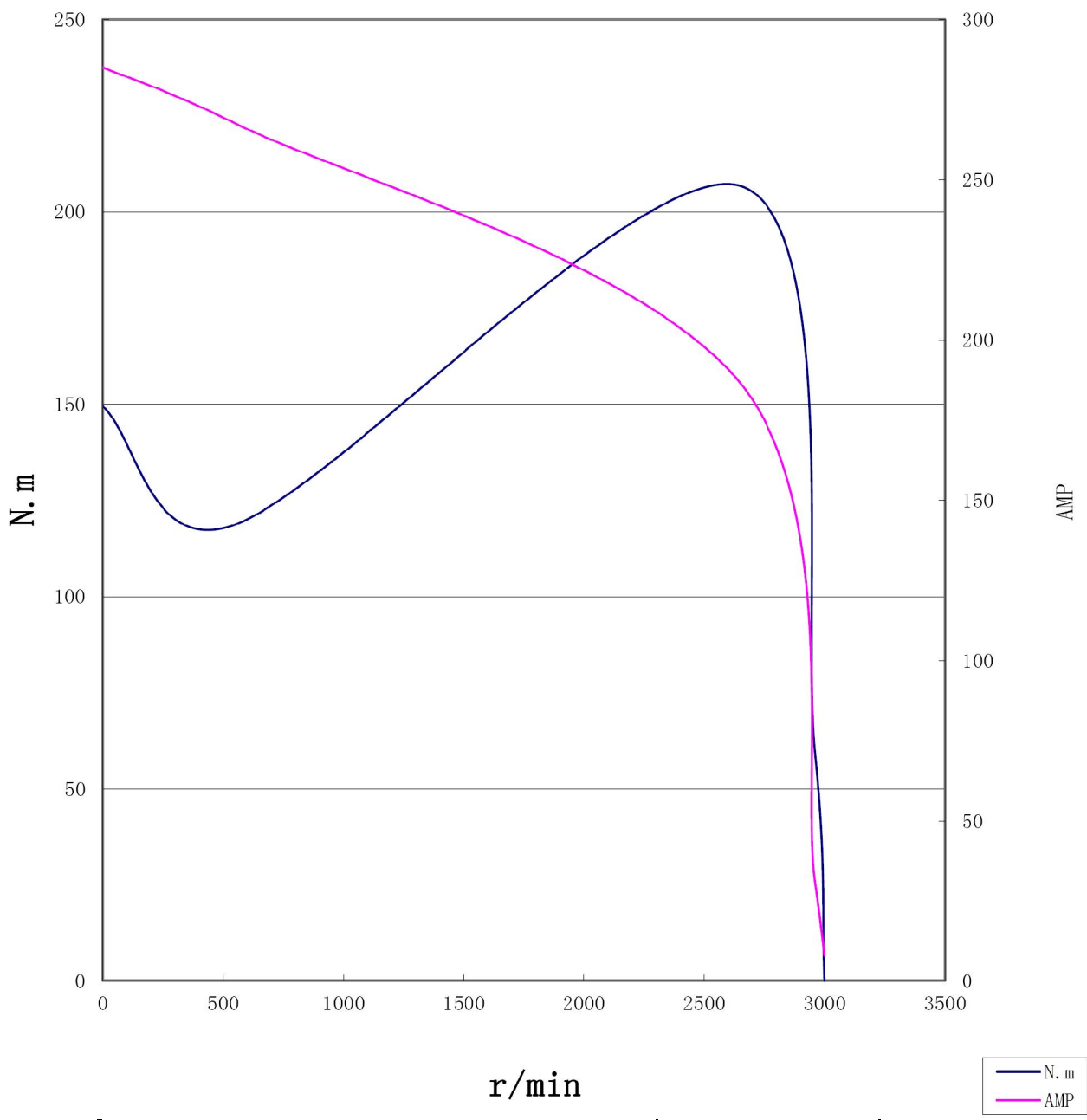


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TORQUE&CURRENT VS SPEED



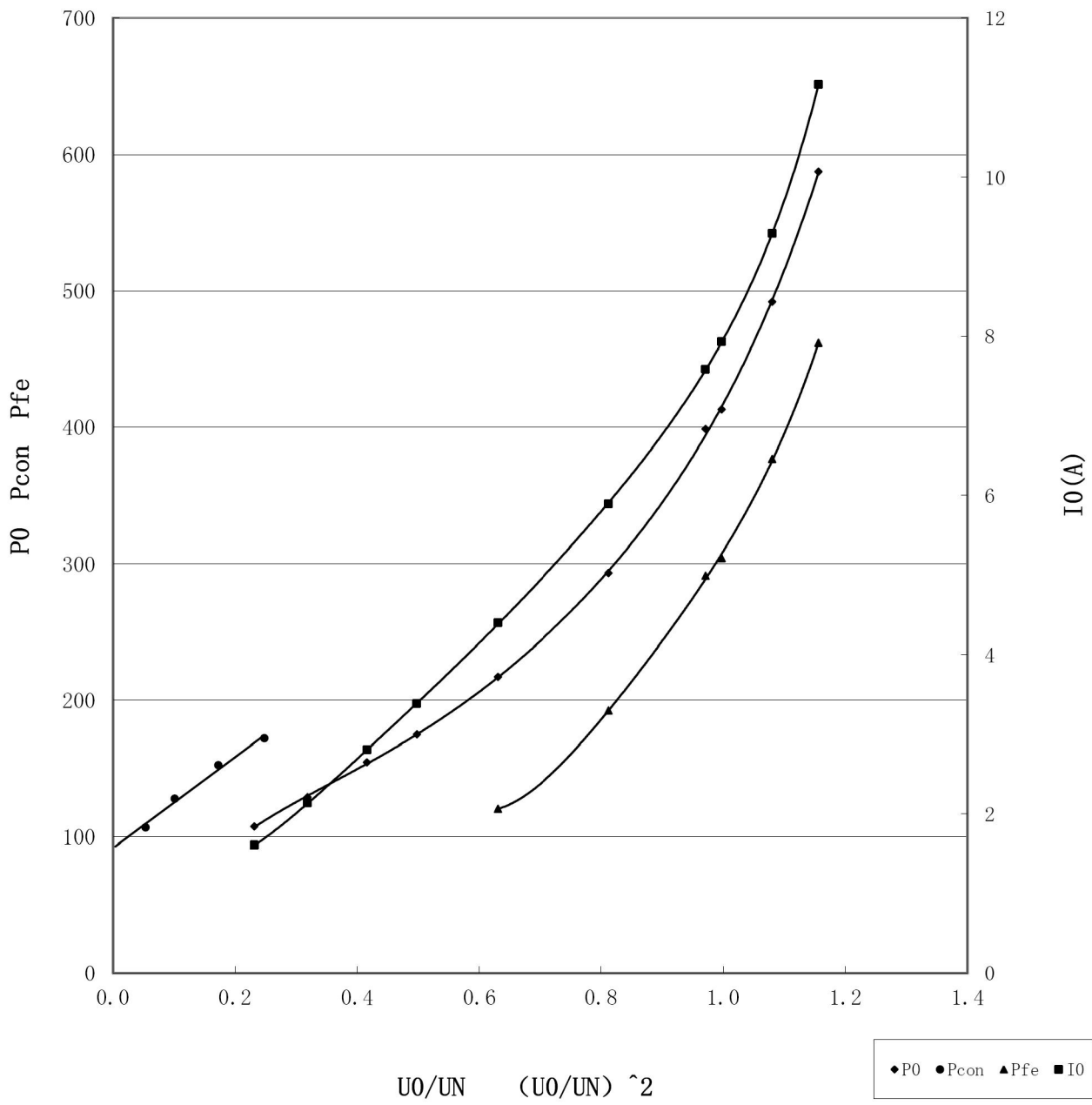
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IE4

No Load Curve

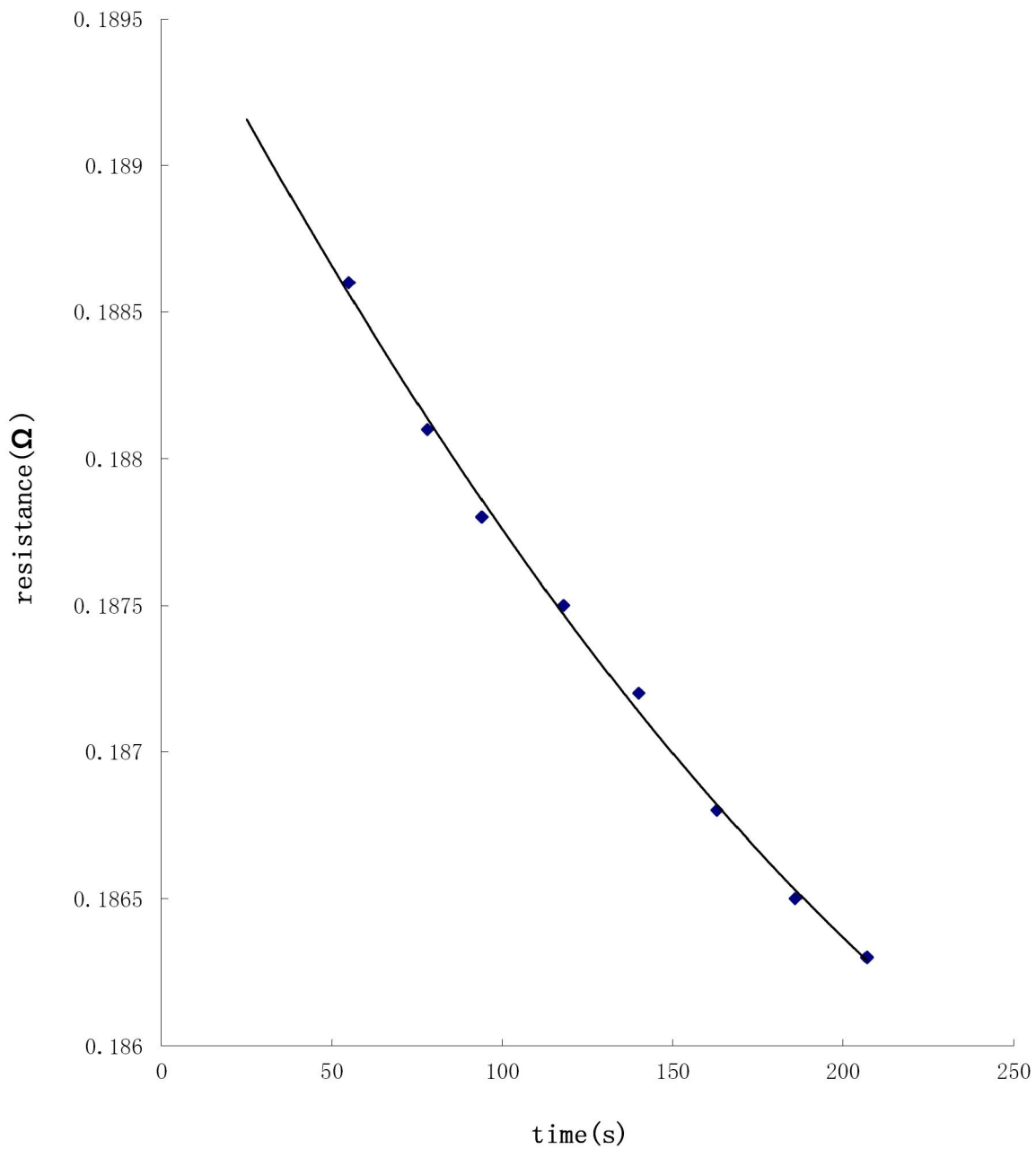


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RESISTANCE CURVE



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Locked Rotor Curve

