

VALIADIS S.A.**ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR**

NAMEPLATE DATA	6	POLE	50	HZ / CYCLES	2,20	KW
K112M-6	FRAME	3	PHASE	F	INS.CLASS	81,80 EFF(IE2)
400	VOLTS	5,0	AMPS	STAR	CONNECTION	IC411 IC
956	RPM	S1	DUTY			
MAJOR CONTENTS		UNIT	TEST VALUE	STANDARD VALUE		
(95°C) PHASE RESISTANCE OF WINDING		OHM	2,5376			
NO LOAD CURRENT		AMP	3,049			
NO LOAD INPUT		kW	210,1			
CORE LOSS(Pfe)		kW	106,5			
WINDAGE FRICTION LOSS(Pfw)		kW	40,3			
STATOR WINDING LOSS(Pcu1)		kW	71,1			
ROTOR WINDING LOSS(Pcu2)		kW	111,4			
STRAY LOAD LOSS(Ps)		kW	12,9			
LOCKED ROTOR CURRENT		A	26,0			
LOCKED ROTOR INPUT @ FULL LOAD		W	12045,3			
LOCKED ROTOR TORQUE		N.m	49,3			
PULL OUT TORQUE		N.m	55,4			
LOCKED ROTOR CURRENT/RATED CURRENT		P.U.	5,17			
LOCKED ROTOR TORQUE/RATED TORQUE		P.U.	2,24			
PULL OUT TORQUE/RATED TORQUE		P.U.	2,52			
FULL LOAD TORQUE		N.m	22,0			
FULL LOAD CURRENT		A	5,294			
FULL LOAD SLIP		%	4,453			
INPUT @ FULL LOAD		KW	2,680			
FULL LOAD SPEED		r/min	955			
EFFICIENCY @ FULL LOAD		%	82,1			
EFFICIENCY @ 75% LOAD		%	81,9			
POWER FACTOR @ FULL LOAD			0,73			
STATOR WINDING TEMPERATURE RISE		K	46			
D.E. BEARINGS TEMPERATURE BY PT100		°C	60,8			
SOUND PRESSURE LEVEL		dB(A)	61			
VIBRATION		mm/s	0,4			
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956	RPM	S1	DUTY			

NO LOAD TEST

V (unit)	mul.	HZ	A1 (unit)	A2 (unit)	A3 (unit)	mul.	W1 (unit)	W2 (unit)	mul.	RESISTANCE
439,4	1	50	1,945	1,926	1,904	2	-355,4	503,3	2	2,27200
419,4	1	50	1,727	1,701	1,680	2	-302,2	426,4	2	2,27200
398,6	1	50	1,540	1,512	1,491	2	-256,7	360,5	2	2,27200
359,6	1	50	1,268	1,250	1,223	2	-188,5	270,6	2	2,27200
317,8	1	50	1,054	1,033	1,010	2	-135,4	201,7	2	2,27200
277,2	1	50	0,881	0,863	0,845	2	-95,7	150,3	2	2,27200
233,4	1	50	0,720	0,705	0,686	2	-61,4	107,0	2	2,27200
190,7	1	50	0,580	0,564	0,548	2	-36,1	73,7	2	2,27200
147,5	1	50	0,450	0,438	0,423	2	-17,2	47,8	2	2,27200
97,7	1	50	0,335	0,317	0,310	2	-1,2	27,0	2	2,27200

data calculation of no load

V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'
109,9%	1,10	3,850	295,8	1,207	101,03	194,77
104,9%	1,05	3,405	248,4	1,099	79,04	169,36
99,7%	1,00	3,029	207,6	0,993	62,52	145,08
89,9%	0,90	2,494	164,2	0,808	42,40	121,80
79,5%	0,79	2,065	132,6	0,631	29,06	103,54
69,3%	0,69	1,726	109,2	0,480	20,31	88,89
58,4%	0,58	1,407	91,2	0,340	13,50	77,70
47,7%	0,48	1,128	75,2	0,227	8,67	66,53
36,9%	0,37	0,874	61,2	0,136	5,21	55,99

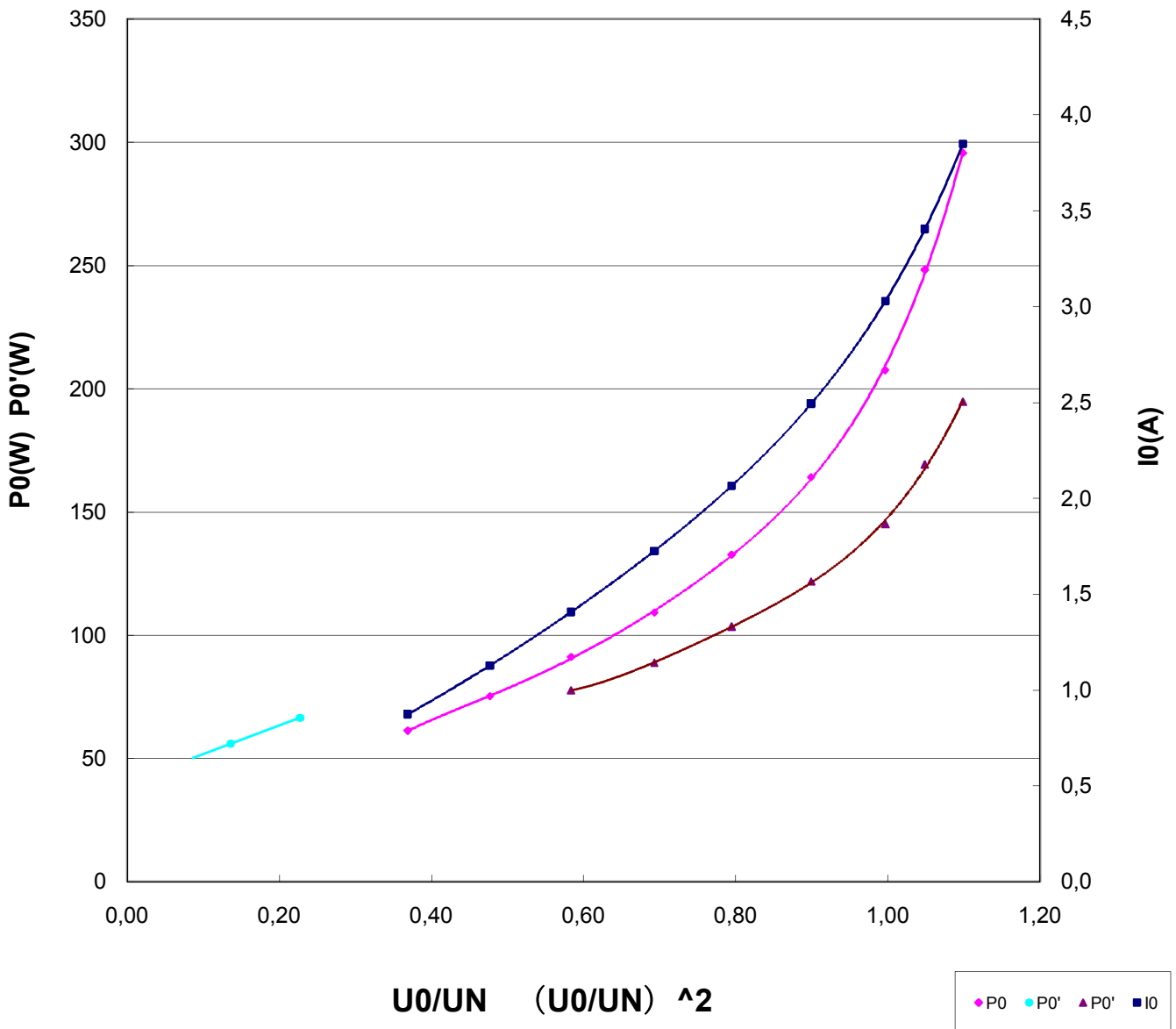
RESULTS AT:	400	Volts	
N.L.AMP	N.L.LOSS	WINDAGE/FRICTION Pfw	CORE LOSS Pfe
3,049	210,063	40,3	106,5
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K112M-6	FRAME	3	PHASE	F	INS.CLASS
400	VOLTS	5,0	AMPS	STAR	CONNECTION
956	RPM	S1	DUTY		81,80 EFF(IE2)

NO LOAD



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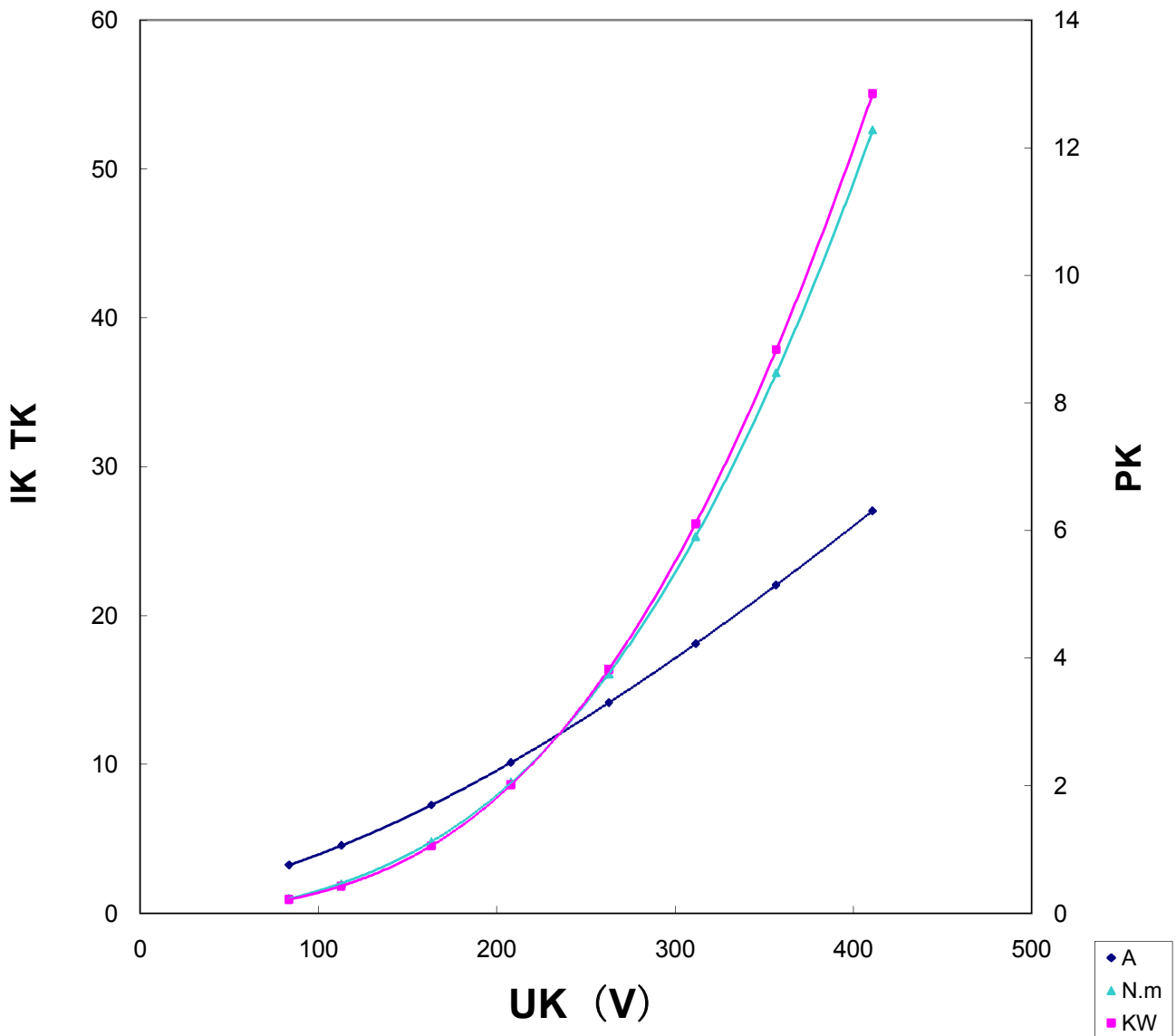
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400	VOLTS	5,0	AMPS	STAR	CONNECTION				
956	RPM	S1	DUTY						
LOCKED ROTOR TEST									
V (unit)	mul.	A1 (unit)	A2 (unit)	A3 (unit)	mul.	W1 (unit)	W2 (unit)	mul.	TORQUE (Kg.m)
410,8	1	2,699	2,709	2,700	10	72,8	1211,8	10	5,37
356,7	1	2,199	2,213	2,203	10	31,7	851,8	10	3,70
311,6	1	1,807	1,817	1,807	10	7,1	603,4	10	2,58
262,9	1	1,410	1,420	1,412	10	-8,6	391,1	10	1,64
207,9	1	1,009	1,016	1,010	10	-14,7	216,1	10	0,90
163,3	1	1,451	1,458	1,449	5	-26,0	237,5	5	0,49
112,8	1	0,911	0,912	0,905	5	-15,1	99,9	5	0,20
83,4	1	0,650	0,647	0,645	5	-8,6	52,0	5	0,10
data calculation of locked rotor									
UK		IK	PK	TK		LOG	LOG		LOG
V		A	KW	N.m	cosφ	UK	IK	LOGPK	TK
410,8		27,03	12,846	52,60	0,668	2,6136	1,4318	1,1088	1,7210
356,7		22,05	8,835	36,30	0,649	2,5523	1,3434	0,9462	1,5599
311,6		18,11	6,105	25,30	0,625	2,4936	1,2578	0,7857	1,4031
262,9		14,14	3,825	16,07	0,594	2,4198	1,1505	0,5826	1,2060
207,9		10,12	2,014	8,82	0,553	2,3179	1,0051	0,3041	0,9455
163,3		7,27	1,058	4,80	0,515	2,2130	0,8612	0,0243	0,6812
112,8		4,55	0,424	1,98	0,477	2,0523	0,6577	-0,3726	0,2967
83,4		3,24	0,217	0,98	0,464	1,9212	0,5100	-0,6635	-0,0088
performance collection of locked rotor									
	at rated		at rated		at 2.5 times rated		at 100V		
	volts		current		current				
VOLTS (V)	400		123,852		251,6		100,0		
AMPS (A)	26,0		5,0		12,60		3,976		
INPUT (KW)	12,045		0,502		2,7		0,334		
TORQUE (N.m)	49,346		2,356						
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400	VOLTS	5,0	AMPS	STAR	CONNECTION	
956	RPM	S1	DUTY			

LOCKED



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956	RPM	S1	DUTY				

TEMPERATURE RISE TEST

TIME (h:min)	V	A1 (unit)	A1 (unit)	A1 (unit)	mul.	W1 (unit)	W2 (unit)	mul.	T1 °C	T2 °C	T3 °C	T4 °C
18:00	400	2,425	2,435	2,427	2,0	1193,6		2	53,6		57,90	28,85
18:30	400	2,468	2,429	2,428	2,0	1194,8		2	54,8		59,60	28,85
19:00	400	2,415	2,437	2,435	2,0	1200,0		2	55,8		60,50	28,90
19:30	400	2,438	2,438	2,458	2,0	1199,4		2	56,1		61,00	28,90
20:00	400	2,445	2,430	2,440	2,0	1205,9		2	56,1		61,00	28,90
average value of the last three points				4,874667 A		2403,533		W	56,0		60,8	28,9

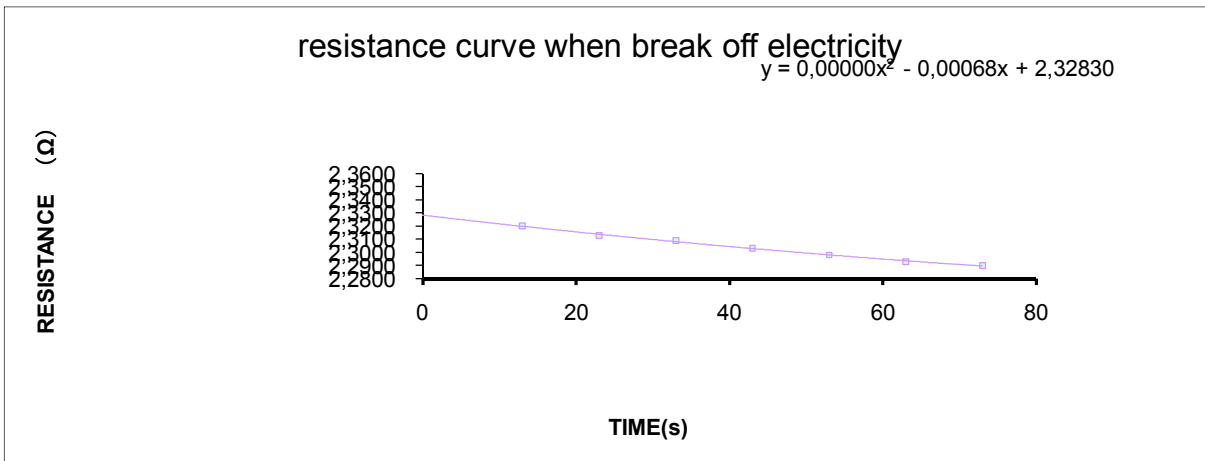
T1 : CORE TEMPERATRE
T2 : DE WINDING TEMPERATURE
T3 : DE BEARING TEMPERATURE
T4 : AMBIENT TEMPERATURE

WINDING RESISTANCE (HOT) AT END OF TEMPERATURE RISE TEST

TIMES (S)	13	23	33	43	53	63	73					
RESISTANCE (Ω)	2,3200	2,3130	2,3090	2,3030	2,2980	2,2930	2,2900					

WINDING RESISTANCE(COLD)

Δ	U1 to V1	U1 to W1	V1 to W1	AVERAGE RESISTANCE	MINIMUM RESISTANCE	AMBIENT TEMPERATURE
	#ΔIΔIP/O!			0		
Y	U	V	W	AVERAGE RESISTANCE	MINIMUM RESISTANCE	AMBIENT TEMPERATURE
	2,029	2,039	2,02	2,0293333	2,02	28,9



resistance value at 0 sec	2,328	calculation value of temp.rising	40,24
30 S (Ω)	2,31015	calculation value of temp.rising	37,91
full load curent	5,29 A	modify value of temp. rising	46

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956	RPM	S1	DUTY						

LOAD TEST

V	HZ	A1 (unit)	A2 (unit)	A3 (unit)	mul.	W1 (unit)	W2 (unit)	mul.	RPM
400	50	3,102	3,142	3,083	2	423,2	1227,7	2	952,0
400	50	2,961	2,872	2,807	2	367,7	1122,8	2	956,0
400	50	2,613	2,647	2,628	2	293,1	1034,6	2	959,0
400	50	2,455	2,475	2,407	2	253,1	957,2	2	962,0
400	50	2,083	2,108	2,043	2	117,9	795,5	2	978,0
400	50	1,828	1,822	1,783	2	11,3	644,5	2	986,0
400	50	1,701	1,694	1,658	2	-95,0	555,4	2	992,0

95	(°C) PHASE RESISTANCE OF WINDING	2,5376	Ω	Pfe= 106,5	W	Pfw= 40,3	W
	θ=	40,24	K	t2=	28,9	°C	

Calculated Results	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P.F.
122,3	2691,4	3301,8	6,22	294,3	5,2220	151,5	17,8	81,51	0,766
110,9	2440,9	2981,0	5,76	252,6	4,787	125,5	15,3	81,88	0,747
99,1	2181,1	2655,4	5,26	210,5	4,460	104,3	12,7	82,14	0,729
90,6	1992,6	2420,6	4,89	182,1	4,134	88,1	11,0	82,32	0,714
68,3	1502,6	1826,8	4,16	131,5	2,393	38,0	7,9	82,25	0,634
47,4	1042,1	1311,6	3,62	99,9	1,523	16,8	6,0	79,45	0,523
30,7	676,1	920,8	3,37	86,4	0,870	6,3	5,2	73,42	0,395

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P.F.
125	2750	3374,8	6,36	307,9	5,25	155,4	18,59	81,49	0,766
110	2420	2956,9	5,71	82,8	4,80	132,8	15,00	81,84	0,747
100	2200	2679,6	5,29	71,1	4,453	111,4	12,88	82,10	0,731
75	1650	2013,6	4,4	49,3	3,063	56,9	8,93	81,94	0,659
50	1100	1382,1	3,74	35,5	1,644	20,4	6,43	79,59	0,533

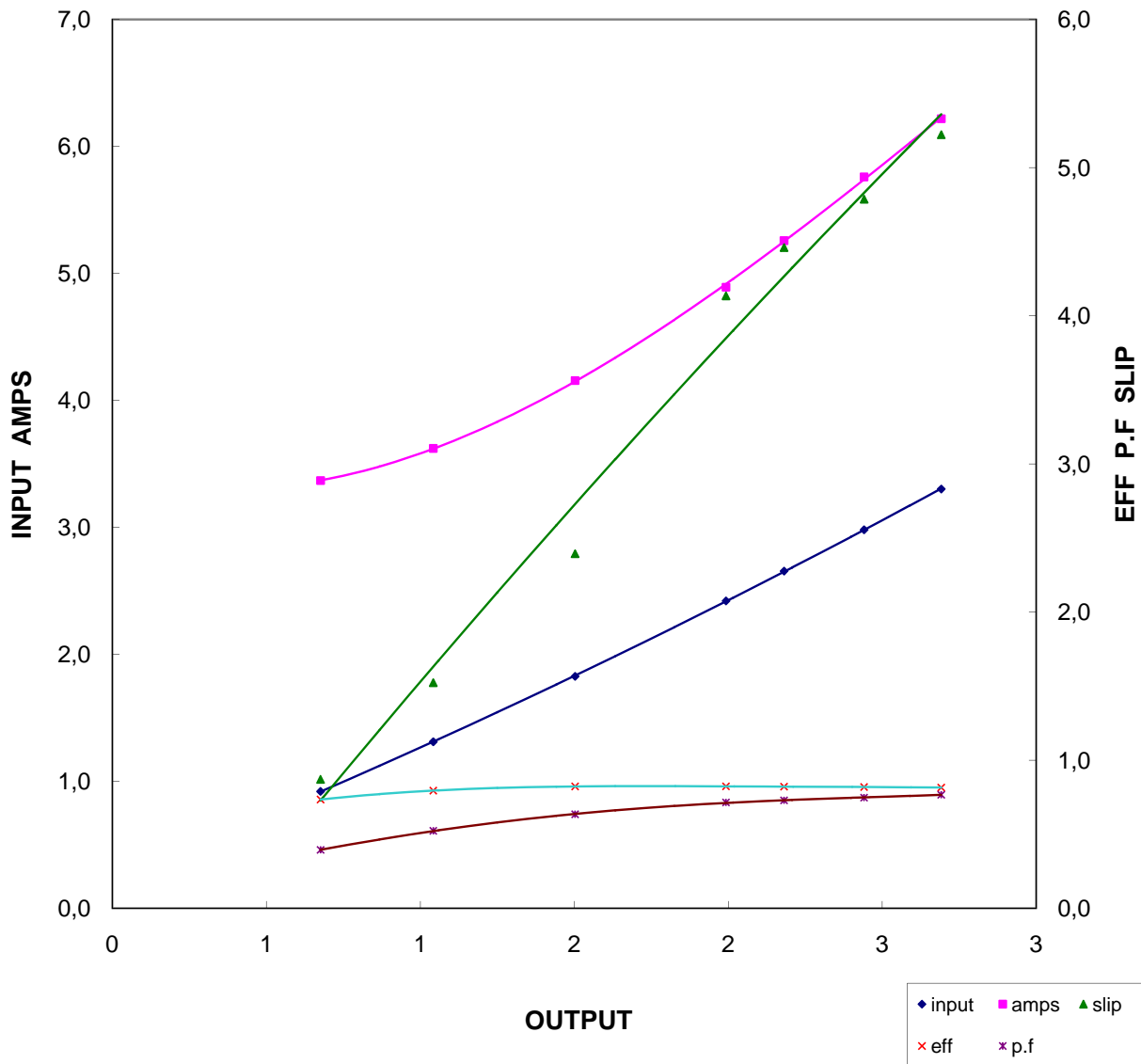
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956	RPM	S1	DUTY			

LOAD CURVE



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