

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA	4	POLE	50	HZ / CYCLES	3,00	KW
K-100L-4 FRAME	3	PHASE	F	INS.CLASS	N/A	EFF2
400 VOLTS	6,4	AMPS	STAR	CONNECTION		
1420 RPM	S1	DUTY				
MAJOR CONTENTS	UNIT	TEST VALUE	STANDARD VALUE			
(95°C) PHASE RESISTANCE OF WINDING	OHM	4,4565				
NO LOAD CURRENT	AMP	3,101				
NO LOAD INPUT	W	237,0				
CORE LOSS(Pfe)	W	171,6				
WINDAGE FRICTION LOSS(Pfw)	W	13,3				
STATOR WINDING LOSS(Pcu1)	W	170,4				
ROTOR WINDING LOSS(Pcu2)	W	165,1				
STRAY LOAD LOSS(Ps)	W	17,0				
LOCKED ROTOR CURRENT	A	41,6				
LOCKED ROTOR INPUT @ FULL LOAD	W	19791,2				
LOCKED ROTOR TORQUE	N.m	54,53				
PULL OUT TORQUE	N.m	60,84				
LOCKED ROTOR CURRENT/RATED CURRENT	P.U.	6,50	≤ 8,4			
LOCKED ROTOR TORQUE/RATED TORQUE	P.U.	2,70	≥ 1,955			
PULL OUT TORQUE/RATED TORQUE	P.U.	3,01	≥ 2,07			
FULL LOAD TORQUE	N.m	20,1				
FULL LOAD CURRENT	A	6,184				
FULL LOAD SLIP	%	5,095				
INPUT @ FULL LOAD	KW	3,583				
FULL LOAD SPEED	r/min	1424				
EFFICIENCY @ FULL LOAD	%	83,7	82,6 -2,61			
POWER FACTOR @ FULL LOAD		0,84	≥ 0,79			
STATOR WINDING TEMPERATURE RISE	K	68	≤ 80			
D.E. BEARINGS TEMPERATURE BY PT100	°C	67,6	≤ 95			
SOUND PRESSURE LEVEL	dB(A)	50	≤ 67			
VIBRATION	mm/s	0,5	≤ 1,8			
VALIADIS S.A.		Manufacturing Date	Manufacturing Code			
		Test Date	Report Number			

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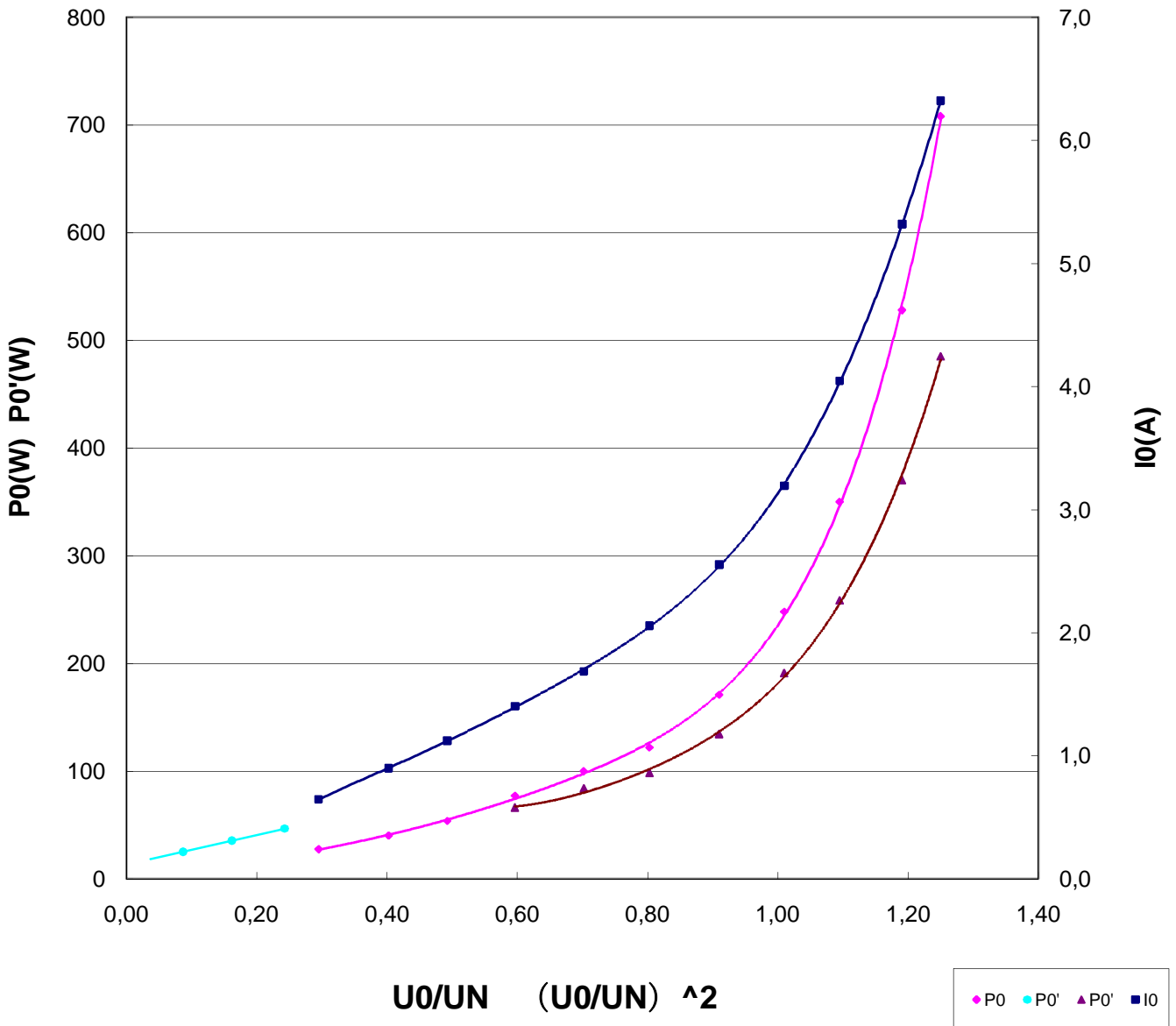
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K-100L-4	FRAME	3	PHASE	F	INS.CLASS	N/A EFF2			
400	VOLTS	6,4	AMPS	STAR	CONNECTION				
1420	RPM	S1	DUTY						
NO LOAD TEST									
V (unit)	mul.	HZ	A1 (unit)	A2 (unit)	A3 (unit)	mul.	Pin (unit)	mul.	RESISTANCE
500,0	1	50	6,55	6,15	6,27	1	708,0	1	3,718
476,4	1	50	5,48	5,18	5,30	1	528,0	1	3,718
438,0	1	50	4,20	3,90	4,04	1	350,0	1	3,718
404,0	1	50	3,38	3,10	3,10	1	248,0	1	3,718
364,0	1	50	2,55	2,52	2,60	1	171,0	1	3,718
321,2	1	50	2,05	2,04	2,08	1	122,0	1	3,718
280,8	1	50	1,68	1,69	1,70	1	100,0	1	3,718
238,6	1	50	1,38	1,40	1,43	1	77,2	1	3,718
197,0	1	50	1,10	1,11	1,15	1	53,8	1	3,718
161,0	1	50	0,90	0,88	0,92	1	40,2	1	3,718
118,0	1	50	0,64	0,64	0,66	1	27,6	1	3,718
data calculation of no load									
V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'			
125,0%	1,25	6,323	708,0	1,563	222,99	485,01			
119,1%	1,19	5,320	528,0	1,418	157,84	370,16			
109,5%	1,10	4,047	350,0	1,199	91,33	258,67			
101,0%	1,01	3,193	248,0	1,020	56,87	191,13			
91,0%	0,91	2,553	171,0	0,828	36,36	134,64			
80,3%	0,80	2,057	122,0	0,645	23,59	98,41			
70,2%	0,70	1,687	100,0	0,493	15,87	84,13			
59,7%	0,60	1,403	77,2	0,356	10,98	66,22			
49,3%	0,49	1,123	53,8	0,243	7,03	46,77			
40,3%	0,40	0,899	40,2	0,162	4,51	35,69			
29,5%	0,30	0,646	27,6	0,087	2,33	25,27			
RESULTS AT:		400	Volts						
N.L.AMP	N.L.LOSS		WINDAGE/FRICTION Pfw			CORE LOSS Pfe			
3,101	236,985		13,3			171,6			
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NO LOAD TEST

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K-100L-4	FRAME	3	PHASE	F	INS.CLASS
400	VOLTS	6,4	AMPS	STAR	CONNECTION
1420	RPM	S1	DUTY		N/A EFF2

NO LOAD



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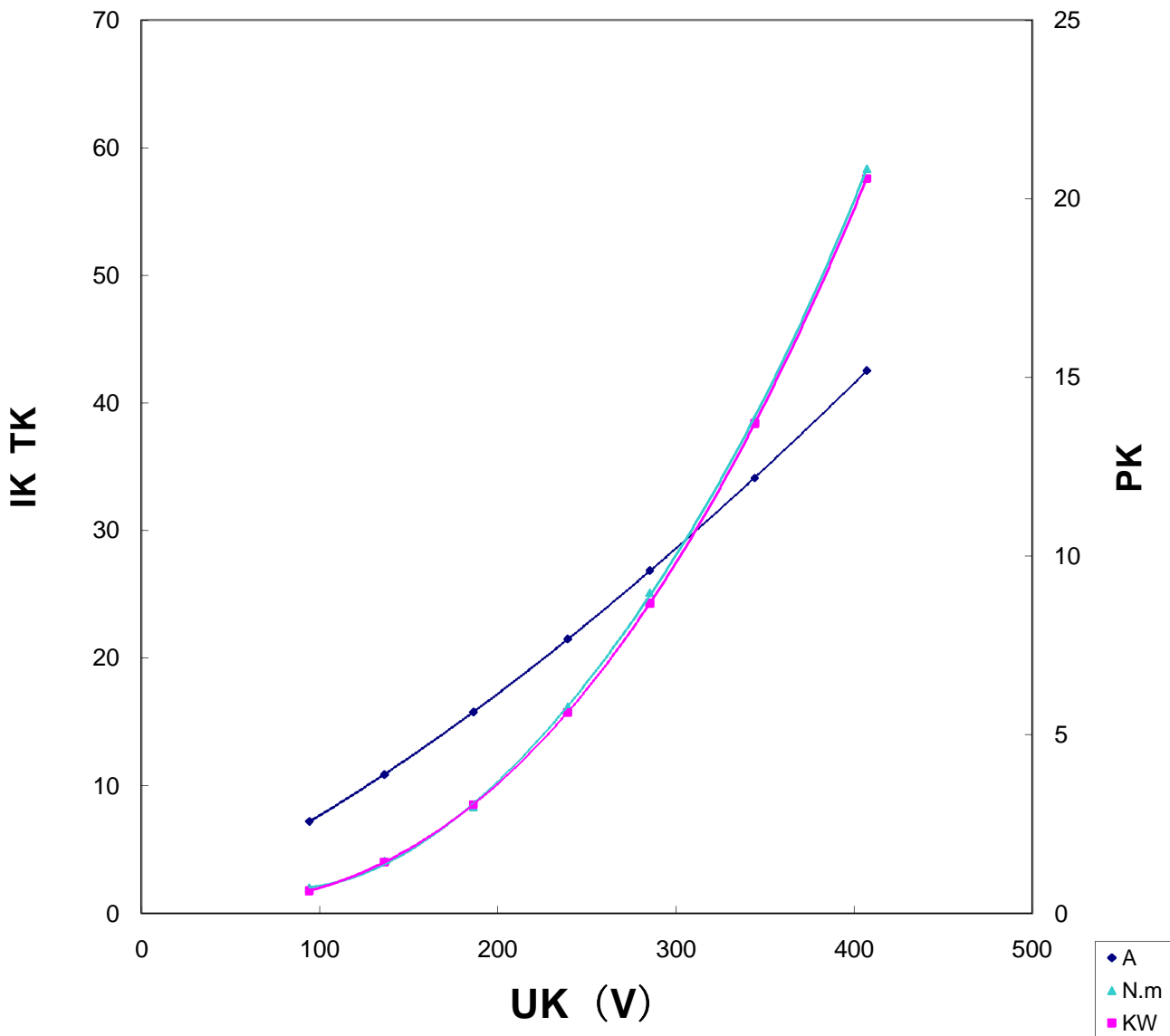
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K-100L-4	FRAME	3	PHASE	F	INS.CLASS	N/A EFF2			
400	VOLTS	6,4	AMPS	STAR	CONNECTION				
1420	RPM	S1	DUTY						
LOCKED ROTOR TEST									
V	mul.	A1 (unit)	A2 (unit)	A3 (unit)	mul.	P	mul.	TORQUE (Kg.m)	
407,1	1	42,5	42,3	42,8	1	20560,0	1	5,95	
344,2	1	34,1	33,9	34,4	1	13706,0	1	3,95	
285,3	1	26,8	26,6	27,1	1	8678,0	1	2,56	
239,2	1	21,5	21,3	21,8	1	5620,0	1	1,65	
186,3	1	15,7	15,5	16,0	1	3039,0	1	0,85	
136,4	1	10,8	10,6	11,1	1	1436,0	1	0,42	
94,2	1	7,2	7,0	7,5	1	626,5	1	0,20	
data calculation of locked rotor									
UK		IK	PK	TK		LOG	LOG	LOG	LOG
V		A	KW	N.m	cosφ	UK	IK	LOGPK	TK
407,1		42,51	20,560	58,35	0,686	2,6096	1,6285	1,3130	1,7660
344,2		34,09	13,706	38,74	0,674	2,5368	1,5327	1,1369	1,5882
285,3		26,85	8,678	25,13	0,654	2,4552	1,4290	0,9384	1,4002
239,2		21,48	5,620	16,18	0,632	2,3787	1,3321	0,7497	1,2090
186,3		15,76	3,039	8,34	0,597	2,2702	1,1976	0,4827	0,9212
136,4		10,86	1,436	4,08	0,560	2,1347	1,0360	0,1572	0,6107
94,2		7,19	0,627	1,96	0,534	1,9741	0,8569	-0,2031	0,2923
performance collection of locked rotor									
	at rated		at rated		at 2.5 times rated		at 100V		
	volts		current		current				
VOLTS (V)	400		86,724		189,6		100,0		
AMPS (A)	41,6		6,4		16,00		7,643		
INPUT (KW)	19,791		0,452		3,0		0,673		
TORQUE (N.m)	54,533		1,132						
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K-100L-4	FRAME	3	PHASE	F	INS.CLASS	N/A
400	VOLTS	6,4	AMPS	STAR	CONNECTION	
1420	RPM	S1	DUTY			

LOCKED



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LOCKED CURVE

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K-100L-4	FRAME	3	PHASE	F	INS.CLASS	N/A EFF2	
400	VOLTS	6,4	AMPS	STAR	CONNECTION		
1420	RPM	S1	DUTY				

TEMPERATURE RISE TEST

TIME (h:min)	V	A1 (unit)	A1 (unit)	A1 (unit)	mul.	Pin	mul.	T1 °C	T2 °C	T3 °C	T4 °C
14,10	400,3	6,4	6,4	6,4	1,0	3363,2	1	79,7		68,2	10,7
14,40	401,2	6,2	6,2	6,2	1,0	3526,2	1	78,7		67,5	10,6
15,10	402,1	6,4	6,4	6,4	1,0	3686,2	1	78,8		67,6	10,5
15,40	403,3	6,4	6,4	6,4	1,0	3689,6	1	78,7		67,6	10,5
average value of the last three points				6,302667 A		1817	W	78,8	#ΔIAIP/0!	67,6	10,5

T1 : CORE TEMPERATRE

T3 : DE BEARING TEMPERATURE

T2 : DE WINDING TEMPERATURE

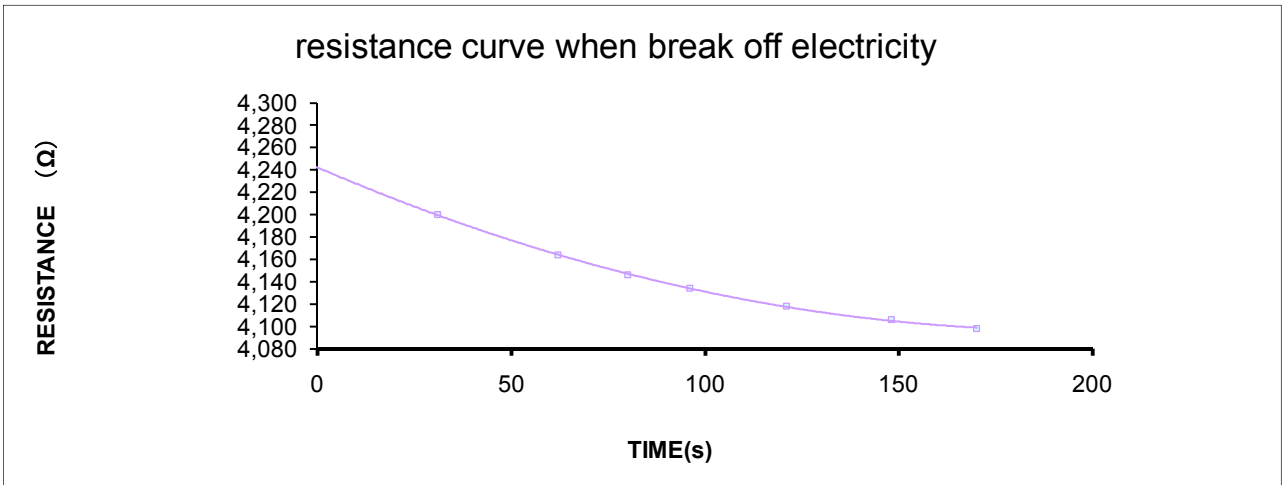
T4 : AMBIENT TEMPERATURE

WINDING RESISTANCE (HOT) AT END OF TEMPERATURE RISE TEST

TIMES (S)	31	62	80	96	121	148	170				
RESISTANCE (Ω)	4,2000	4,164	4,146	4,1340	4,1180	4,1060	4,0980				

WINDING RESISTANCE(COLD)

Δ	U1 to V1	U1 to W1	V1 to W1	AVERAGE RESISTANCE	MINIMUM RESISTANCE	AMBIENT TEMPERATURE
				#ΔIAIP/0!	0	
Y	U	V	W	AVERAGE RESISTANCE	MINIMUM RESISTANCE	AMBIENT TEMPERATURE
	3,31	3,318	3,318	3,3153333	3,31	10,5



resistance value at 0 sec

4,24222

calculation value of temp.rising

69,1

30 S (Ω)

4,200669

calculation value of temp.rising

66,06

full load curent

6,40 A

modify value of temp. rising

68,1

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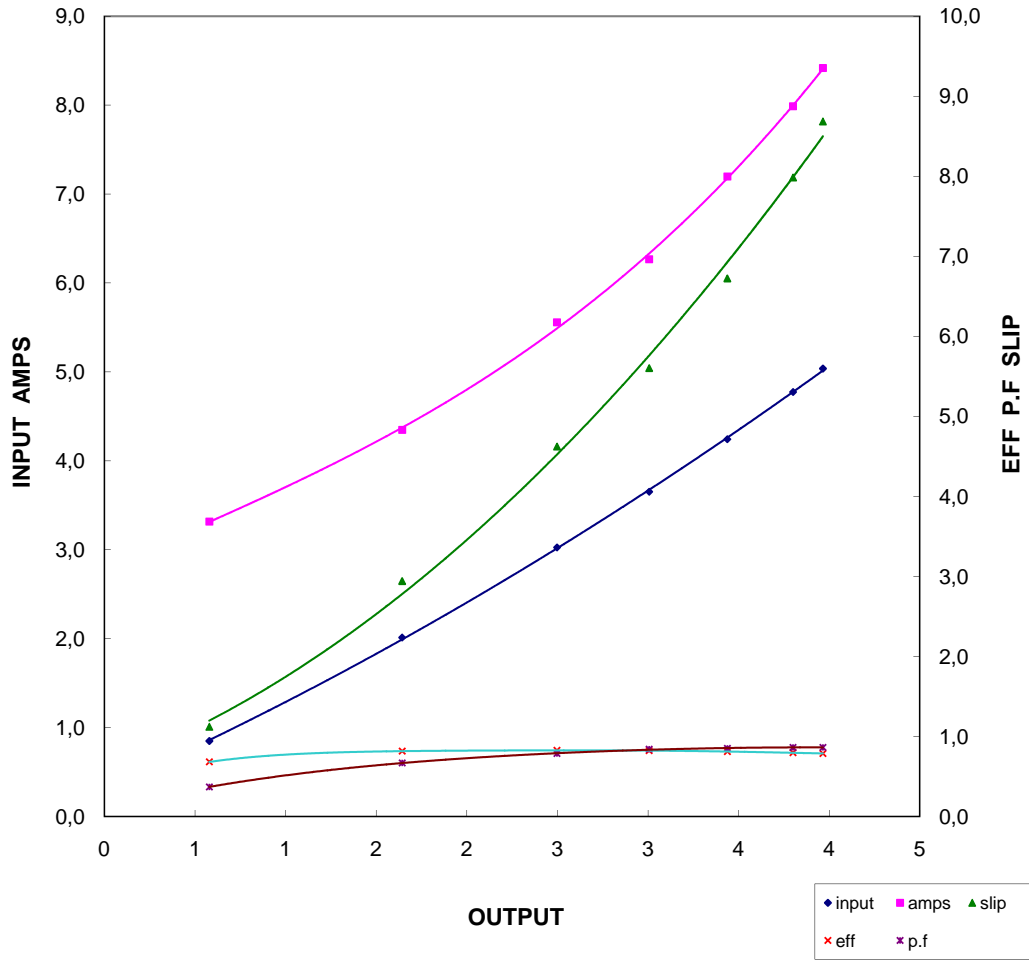
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K-100L-4	FRAME	3	PHASE	F	INS.CLASS	N/A EFF2			
400	VOLTS	6,4	AMPS	STAR	CONNECTION				
1420	RPM	S1	DUTY						
LOAD TEST									
V	HZ	A1 (unit)	A2 (unit)	A3 (unit)	mul.	Pin	mul.	RPM	
400	50	8,42	8,49	8,34	1	5036,0	1	1376,0	
400	50	7,99	8,06	7,91	1	4773,0	1	1386,0	
400	50	7,20	7,27	7,12	1	4242,0	1	1404,0	
400	50	6,27	6,34	6,19	1	3651,0	1	1420,0	
400	50	5,56	5,63	5,48	1	3025,0	1	1434,0	
400	50	4,35	4,42	4,27	1	2013,0	1	1458,0	
400	50	3,32	3,39	3,24	1	849,0	1	1484,0	
SE									
95	RESISTANCE OF	4,4565	Ω	$\theta=$	69,14	K	Pfe=	171,6	W
							t2=	10,5	$^{\circ}\text{C}$
							Pfw=	13,3	W
Calculated Results	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P.F.
132,2	3964,9	5036,0	8,42	473,5	8,683	381,3	31,4	78,73	0,864
126,7	3800,2	4773,0	7,99	426,4	7,983	333,3	28,3	79,62	0,863
114,6	3437,6	4242,0	7,20	346,2	6,723	250,4	23,0	81,04	0,851
100,2	3006,0	3651,0	6,27	262,5	5,602	180,2	17,4	82,33	0,841
83,3	2497,7	3025,0	5,56	206,4	4,622	122,3	13,7	82,57	0,786
54,8	1643,1	2013,0	4,35	126,3	2,941	50,4	8,4	81,62	0,668
19,3	579,0	849,0	3,32	73,5	1,120	6,8	4,9	68,20	0,369
% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P.F.
125	3750	4707,3	7,88	829,4	7,77	288,0	27,50	79,66	0,863
110	3300	4032,7	6,87	210,4	6,20	226,3	20,93	81,83	0,847
100	3000	3583,0	6,18	170,4	5,095	165,1	16,96	83,73	0,836
75	2250	2737,6	5,2	120,7	4,130	101,0	12,00	82,19	0,759
50	1500	1856,5	4,21	78,9	2,696	43,3	7,85	80,80	0,637
25	750	1036,1	3,5	54,0	1,413	11,5	5,38	72,39	0,429
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400	VOLTS	6,4	AMPS	STAR	CONNECTION	
1420	RPM	S1	DUTY			

LOAD CURVE



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