

# VALIADIS S.A.

## ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K100L-2	Poles	2	Power	3,0	kW	IE:3
Voltage	400 V	Current	5,6 A	Frequency	50	Hz	
Speed	2903 r/min	Duty	S1	Connecti	Y		
Ins.class	F	Weight	45 kg		IP55		
MAJOR CONTENTS				TEST VALUE			
95,0 °C PHASE RESISTANCE OF WINDING	Ω						1,4007
NO LOAD CURRENT	A						1,889
NO LOAD INPUT	W						202,57
CORE LOSS(Pfe)	W						62,45
WINDAGE FRICTION LOSS(Pfw)	W						127,84
STATOR WINDING LOSS(Pcu1)	W						121,59
ROTOR WINDING LOSS(Pcu2)	W						105,20
STRAY LOAD LOSS(Ps)	W						31,18
LOCKED ROTOR CURRENT	A						47,633
LOCKED ROTOR INPUT @ FULL LOAD	W						21479
LOCKED ROTOR TORQUE	N.m						28,3
PULL OUT TORQUE	N.m						38,2
LOCKED ROTOR CURRENT/RATED CURRENT	P.U						8,45
LOCKED ROTOR TORQUE/RATED TORQUE	P.U						2,84
PULL OUT TORQUE/RATED TORQUE	P.U						3,84
FULL LOAD TORQUE	N.m						9,87
FULL LOAD CURRENT	A						5,639
FULL LOAD SLIP	%						3,222
INPUT @ FULL LOAD	kW						3,449
FULL LOAD SPEED	r/min						2903,3
EFFICIENCY @ FULL LOAD	%						86,99
EFFICIENCY @ 75% LOAD	%						86,91
POWER FACTOR @ FULL LOAD							0,883
STATOR WINDING TEMPERATURE RISE	K						37
D.E. BEARINGS TEMPERATURE BY PT100	°C						34,1
STATOR WINDING TEMPERATURE	°C						44,3
High voltage test	V	1800					Imin
Insulation resistance	MΩ						500
NOISE ( LW)	dB(A)						66
VIBRATION	mm/s						0,6

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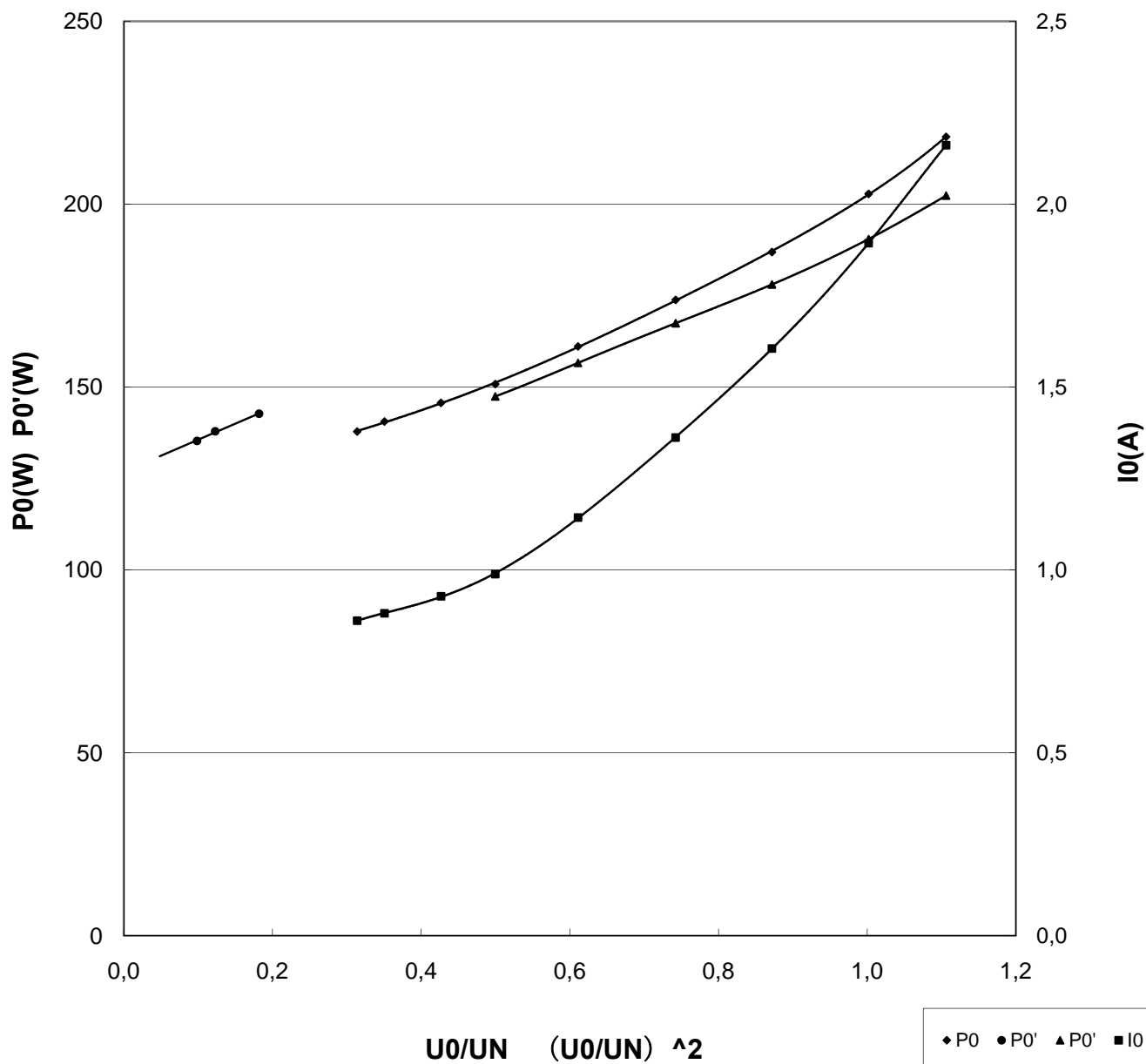
Type	K100L-2		Poles	2		Power	3,0 kW		IE:3		
Voltage	400	V	Current	5,6	A	Frequency	50 Hz				
Speed	2903	r/min	Duty	S1		Connection	Y				
Ins.class	F		Weight	45	kg			IP55			
NO LOAD TEST											
VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
442,4	1	50	1,139	1,094	1,009	2	-189,9	299,1	2	35,4	1,1477
400,7	1	50	0,993	0,947	0,900	2	-133,8	235,2	2	35,4	1,1477
348,7	1	50	0,835	0,816	0,757	2	-89,7	183,2	2	35,2	1,1469
296,9	1	50	0,701	0,705	0,637	2	-54,6	141,5	2	35,2	1,1469
244,4	1	50	0,585	0,598	0,532	2	-24,8	105,4	2	35,2	1,1469
199,9	1	50	0,490	0,518	0,475	2	-7,9	83,3	2	35,0	1,1460
170,7	1	50	0,467	0,476	0,449	2	-4,1	76,9	2	34,6	1,1443
140,3	1	50	0,435	0,449	0,438	2	0,6	69,7	2	34,1	1,1422
125,6	1	50	0,428	0,438	0,426	2	5,0	63,9	2	33,9	1,1414
data calculation of no load											
V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'					
110,6%	1,11	2,161	218,4	1,223	16,08	202,34					
100,2%	1,00	1,893	202,8	1,004	12,34	190,46					
87,2%	0,87	1,605	186,9	0,760	8,87	178,05					
74,2%	0,74	1,362	173,8	0,551	6,38	167,44					
61,1%	0,61	1,143	161,1	0,373	4,50	156,60					
50,0%	0,50	0,989	150,8	0,250	3,36	147,44					
42,7%	0,43	0,928	145,7	0,182	2,96	142,70					
35,1%	0,35	0,881	140,6	0,123	2,66	137,89					
31,4%	0,31	0,861	137,8	0,099	2,54	135,27					
RESULTS AT: 400 V											
N.L.AMP	1,89	N.L.LOSS(W)	202,57	Pw(W)	127,8	Pe(W)	62,4				

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Type	K100L-2	Poles	2	Power	3,0	IE:3
Voltage	400 V	Current	5,6 A	Frequency	50,0	Hz
Speed	2903 r/min	Duty	S1	Connection	Y	
Ins.class	F	Weight	45 kg		IP55	

### No Load Curve



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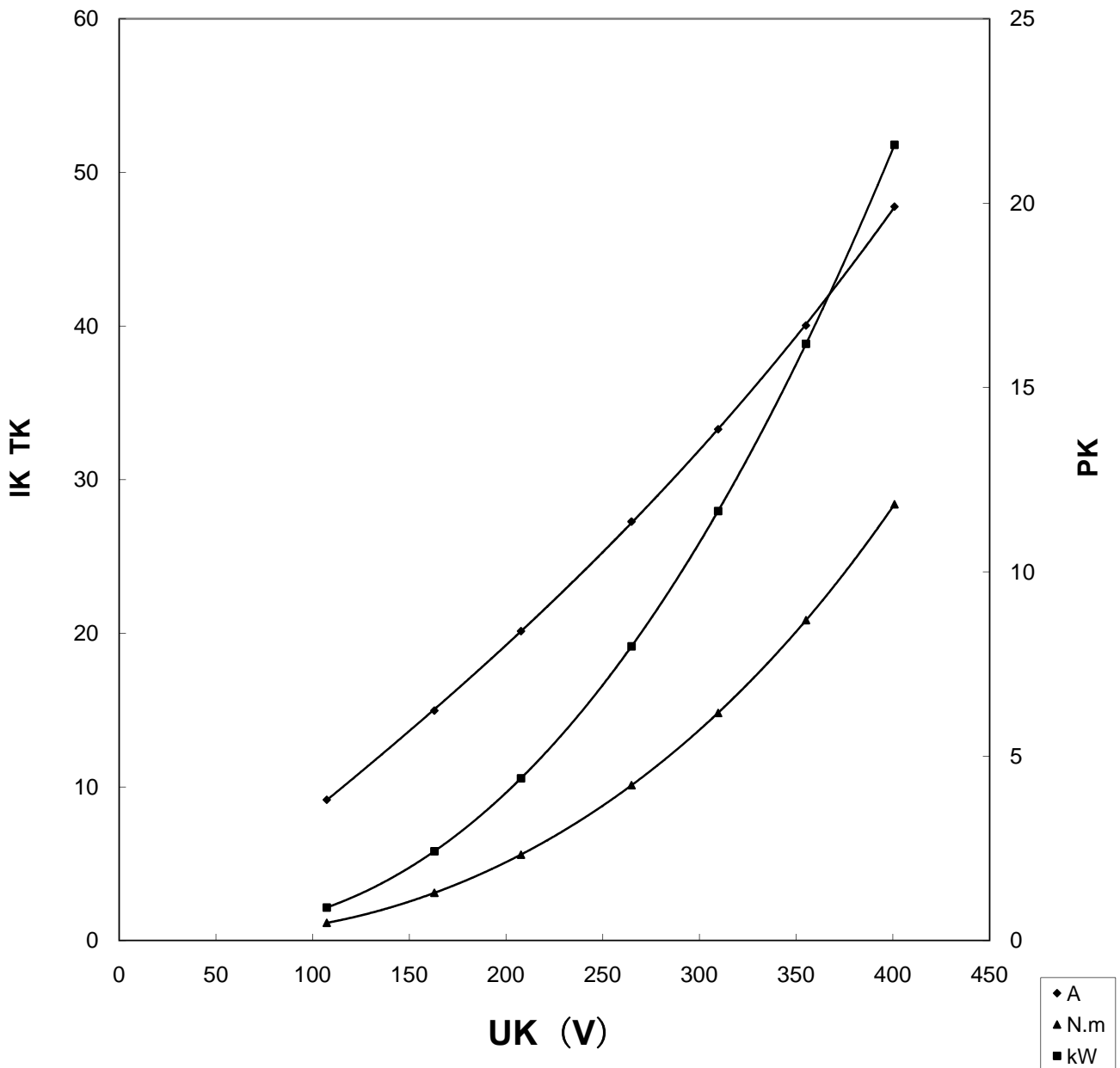
Type	K100L-2		Poles	2		Power	3,0		IE:3
Voltage	400	V	Current	5,6	A	Frequency	50,0		Hz
Speed	2903	r/min	Duty	S1		Connection	Y		
Ins.class	F		Weight	45	kg	IP55			
LOCKED ROTOR TEST									
VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqur ( kg.m)
400,9	1,0	2,377	2,377	2,413	20,0	153,3	925,7	20,0	2,90
355,1	1,0	1,991	1,991	2,023	20,0	120,5	688,8	20,0	2,13
309,7	1,0	1,655	1,654	1,684	20,0	85,1	497,4	20,0	1,51
264,9	1,0	1,355	1,354	1,382	20,0	53,3	345,7	20,0	1,03
207,7	1,0	1,001	0,999	1,021	20,0	23,2	196,8	20,0	0,57
162,9	1,0	0,746	0,743	0,757	20,0	8,5	112,8	20,0	0,32
107,3	1,0	0,458	0,455	0,463	20,0	0,6	44,3	20,0	0,12
data calculation of locked rotor									
Uk	IK	PK	TK		LOGUk	LOGIk	LOGPk	LOGTk	
V	A	kW	N.m						
400,86	47,78	21,580	28,40		2,6030	1,6792	1,3341	1,4533	
355,10	40,04	16,184	20,86		2,5504	1,6025	1,2091	1,3192	
309,67	33,29	11,651	14,82		2,4909	1,5223	1,0664	1,1709	
264,88	27,28	7,980	10,12		2,4230	1,4358	0,9020	1,0051	
207,73	20,15	4,400	5,59		2,3175	1,3042	0,6435	0,7475	
162,94	14,97	2,424	3,11		2,2120	1,1753	0,3846	0,4922	
107,30	9,17	0,897	1,15		2,0306	0,9623	-0,0473	0,0621	
performance collection of locked rotor									
	at rated volts		at rated current		at 2.5 times rated current		at 100V		
VOLTS ( V )	400		69,723		154,6		100,0		
AMPS ( A )	47,6		5,7		14,3		8,72		
INPUT ( kW )	21,48				2,4		1,001		
TORQUE ( N.m)	28,26								

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Type	K100L-2	Poles	2	Power	3,0	IE:3
Voltage	400 V	Current	5,6 A	Frequency	50,0	kW
Speed	2903 r/min	Duty	S1	Connection	Y	Hz
Ins.class	F	Weight	45 kg			IP55

### Locked Rotor Curve



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## ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K100L-2		Poles	2		Power	3 kW		IE:3	
Voltage	400	V	Current	5,6	A	Frequency	50 Hz			
Speed	2903	r/min	Duty	S1		Connection	Y			
Ins.class	F		Weight	45	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	
14,00	400,4	2,840	2,866	2,810	2	618,9	1128	2	39,3	—	47,2	45,8	—	—	—	—	—	—	—	—	—	7,4
14,30	399,6	2,832	2,862	2,809	2	617,0	1124	2	37,5	—	45,1	43,7	—	—	—	—	—	—	—	—	—	7,3
14,00	400,1	2,841	2,869	2,811	2	618,8	1128	2	36,2	—	44,7	43,3	—	—	—	—	—	—	—	—	—	7,7
15,30	400,5	2,852	2,880	2,828	2	623,4	1135	2	34,8	—	44,5	43,1	—	—	—	—	—	—	—	—	—	7,5
15,59	400,4	2,845	2,871	2,814	2	619,8	1130	2	34,1	—	44,3	42,9	—	—	—	—	—	—	—	—	—	7,9
The average of the last three		5,691		A		3503,23		W		34,1	—	44,5	42,9	—	—	—	—	—	—	—	—	7,7

T1 T2 : DE BEARING TEMPERATURE

T11 : CORE TEMPERATRE

T12: FRAME TEMPERATRE

T3~T10 : DE WINDING TEMPERATURE

T13 : AMBIENT TEMPERATURE

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

TIME (S)	30	40	50	60	70	80				
RESISTANCE	1,1910	1,1880	1,1860	1,1835	1,1820	1,1800				

### WINDING RESISTANCE(COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	1,031	1,0315	1,0305	1,031	1,0305	7,9 °C

resistance value at 0 sec ( Ω )

1,200364

calculation value of temp.rising

40,24 K

30 S ( Ω )

1,190833

calculation value of temp.rising

37,99 K

full load current

5,64 A

modify value of temp. rising

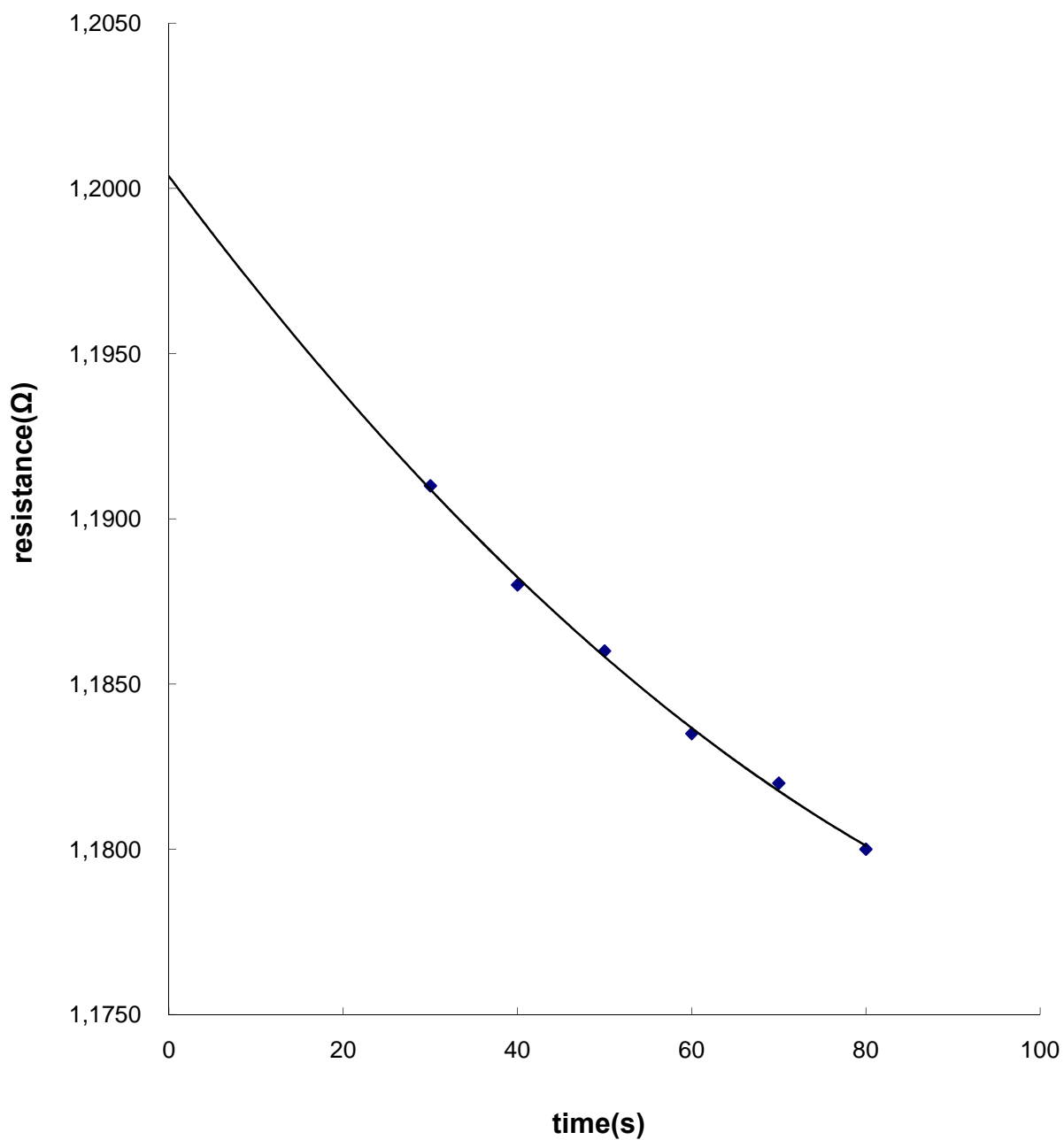
37,30 K

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Type	K100L-2	Poles	2	output Power	3,0	IE:3
Voltage	400 V	Current	5,6 A	Frequency	50,0	kW
Speed	2903 r/min	Duty	S1	Connection	Y	Hz
Ins.class	F	Weight	45 kg		IP55	

### RESISTANCE CURVE



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Type	K100L-2		Poles	2		Power	3,0		<b>IE:3</b>			
Voltage	400	V	Current	5,6	A	Frequency	50,0		<b>kW</b>			
Speed	2903	r/min	Duty	S1		Connection	Y		<b>Hz</b>			
Ins.class	F		Weight	45	kg	IP55						
LOAD TEST												
V	HZ	I1	I2	I3	mul.	W1	W2	mul.	r/min	Resistance Ω	Temperature °C	Torqure N.m
400,5	50,00	4,235	4,256	4,206	2	961,9	1668,2	2	2860,0	1,1651	39,5	14,99
400,6	50,00	3,366	3,382	3,342	2	764,4	1325,7	2	2889,8	1,1664	39,8	11,91
400,2	50,00	3,097	3,127	3,070	2	688,4	1224,9	2	2899,6	1,1711	40,9	10,89
399,9	50,00	2,834	2,863	2,819	2	615,4	1121,9	2	2909,3	1,1745	41,7	9,88
399,8	50,00	2,223	2,243	2,181	2	432,0	881,0	2	2933,5	1,1749	41,8	7,37
400,4	50,00	1,661	1,678	1,625	2	247,6	657,5	2	2956,3	1,1736	41,5	4,91
400,3	50,00	1,202	1,215	1,132	2	56,9	451,4	2	2977,1	1,1702	40,7	2,45
400,0	50,0	1,881	1,900	1,891	1,0	-163,5	657,9	1	2989,6	1,1698	40,6	0,86
400,0	50,0	1,879	1,897	1,895	1,0	-265,9	468,8	1	3000,0	1,1494	35,8	0,00
slope A= 0,32013		intercept B= 11,20			relative coefficient r= 0,990							
LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pz W	N.m	EFF %	P.F	
150,0	4500	8,52	5292,3	277,3	5,089	252,0	73,4	793,1	15,1	85,03	0,897	
125,0	3750	7,00	4350,8	187,4	4,146	170,0	49,7	597,5	12,5	86,19	0,897	
100,0	3000	5,64	3448,7	121,6	3,222	105,2	31,2	448,3	9,9	86,99	0,883	
75,0	2250	4,38	2588,9	73,4	2,344	57,5	17,2	338,3	7,3	86,91	0,853	
50,0	1500	3,25	1764,2	40,5	1,523	25,3	7,5	263,6	4,8	85,03	0,783	
25,0	750	2,31	968,7	20,4	0,778	6,9	1,8	219,4	2,4	77,43	0,606	



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Speed	2903 r/min	Duty	S1	Connection	Y	Hz
Ins.class	F	Weight	45 kg		IP55	

### LOAD CURVE

