

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K90L-2	Poles	2	Power	2,2	kW	IE:3
Voltage	400 V	Current	4,3 A	Frequency	50	Hz	
Speed	2909 r/min	Duty	S1	Connecti	Y		
Ins.class	F	Weight	36 kg		IP55		
MAJOR CONTENTS				TEST VALUE			
95,0 °C PHASE RESISTANCE OF WINDING	Ω						2,4842
NO LOAD CURRENT	A						1,796
NO LOAD INPUT	W						131,83
CORE LOSS(Pfe)	W						55,53
WINDAGE FRICTION LOSS(Pfw)	W						56,75
STATOR WINDING LOSS(Pcu1)	W						123,81
ROTOR WINDING LOSS(Pcu2)	W						72,20
STRAY LOAD LOSS(Ps)	W						48,66
LOCKED ROTOR CURRENT	A						33,107
LOCKED ROTOR INPUT @ FULL LOAD	W						18290
LOCKED ROTOR TORQUE	N.m						19,8
PULL OUT TORQUE	N.m						29,0
LOCKED ROTOR CURRENT/RATED CURRENT	P.U						7,79
LOCKED ROTOR TORQUE/RATED TORQUE	P.U						2,71
PULL OUT TORQUE/RATED TORQUE	P.U						3,97
FULL LOAD TORQUE	N.m						7,2
FULL LOAD CURRENT	A						4,3
FULL LOAD SLIP	%						3,037
INPUT @ FULL LOAD	kW						2,557
FULL LOAD SPEED	r/min						2908,9
EFFICIENCY @ FULL LOAD	%						86,04
EFFICIENCY @ 75% LOAD	%						86,65
POWER FACTOR @ FULL LOAD							0,868
STATOR WINDING TEMPERATURE RISE	K						39
D.E. BEARINGS TEMPERATURE BY PT100	°C						27,7
STATOR WINDING TEMPERATURE	°C						43,0
High voltage test	V	1800					Imin
Insulation resistance	MΩ						500
NOISE (LW)	dB(A)						62
VIBRATION	mm/s						0,5

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

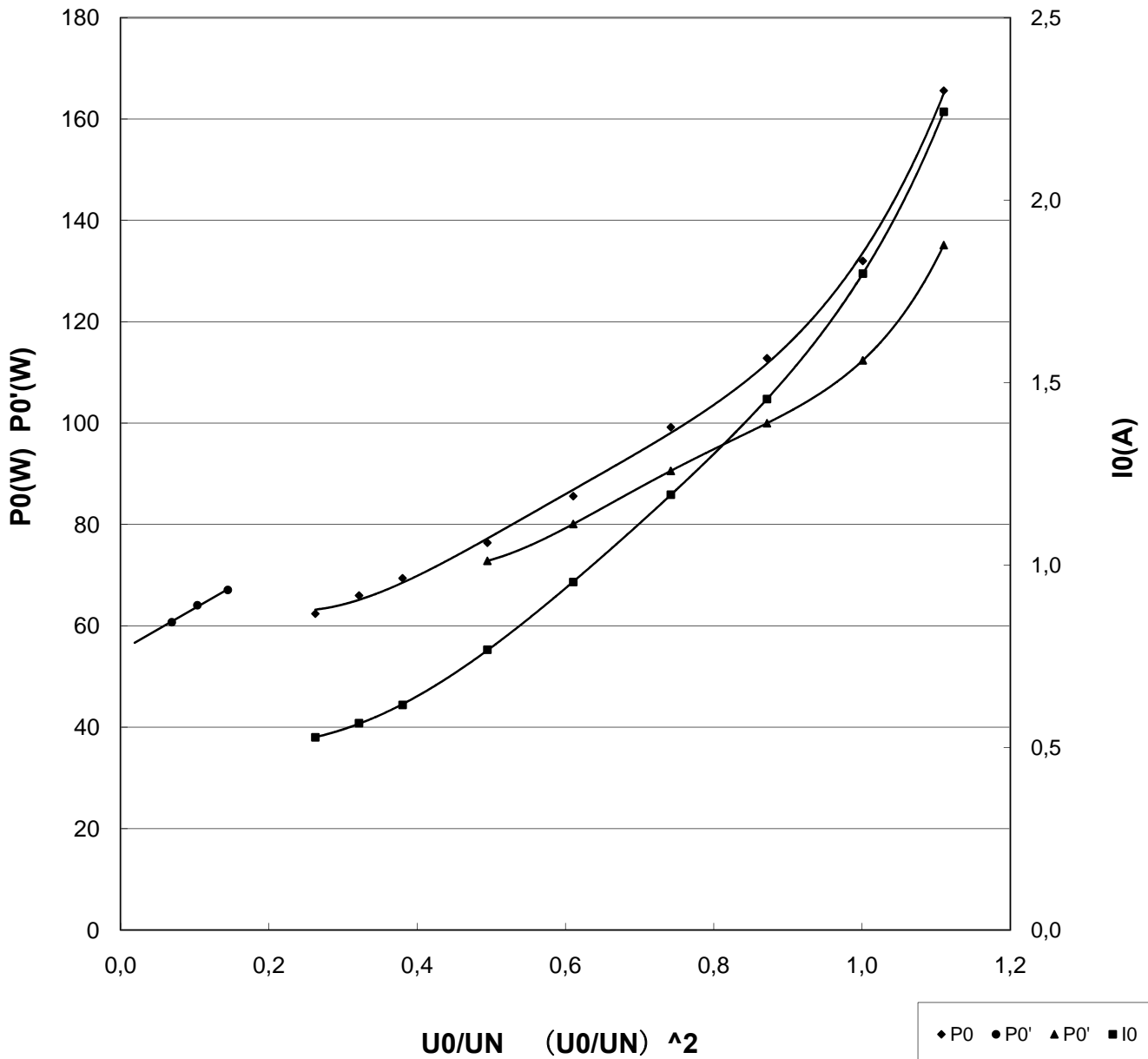
Type	K90L-2		Poles	2		Power	2,2 kW		IE:3		
Voltage	400	V	Current	4,3	A	Frequency	50 Hz				
Speed	2909	r/min	Duty	S1		Connection	Y				
Ins.class	F		Weight	36	kg			IP55			
NO LOAD TEST											
VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
444,1	1	50	1,171	1,123	1,069	2	-212,4	295,2	2	33,5	2,021
400,4	1	50	0,936	0,895	0,867	2	-147,2	213,2	2	33,5	2,021
348,7	1	50	0,755	0,733	0,694	2	-100,4	156,8	2	33,3	2,020
296,8	1	50	0,613	0,610	0,566	2	-65,6	115,2	2	33,3	2,020
244,2	1	50	0,486	0,494	0,450	2	-38,2	81,0	2	33,3	2,020
197,9	1	50	0,387	0,403	0,362	2	-19,4	57,6	2	33,1	2,018
152,1	1	50	0,305	0,327	0,293	2	-5,3	40,0	2	32,9	2,017
128,6	1	50	0,276	0,301	0,273	2	0,5	32,5	2	32,7	2,015
105,1	1	50	0,254	0,280	0,258	2	4,5	26,7	2	32,6	2,014
data calculation of no load											
V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'					
111,0%	1,11	2,242	165,6	1,233	30,48	135,12					
100,1%	1,00	1,799	132,0	1,002	19,62	112,38					
87,2%	0,87	1,455	112,8	0,760	12,82	99,98					
74,2%	0,74	1,193	99,2	0,551	8,62	90,58					
61,1%	0,61	0,953	85,6	0,373	5,51	80,09					
49,5%	0,49	0,768	76,4	0,245	3,57	72,83					
38,0%	0,38	0,617	69,4	0,145	2,30	67,10					
32,2%	0,32	0,567	66,0	0,103	1,94	64,06					
26,3%	0,26	0,528	62,4	0,069	1,68	60,72					
RESULTS AT: 400 V											
N.L.AMP	1,80	N.L.LOSS(W)	131,83	Pw(W)	56,7	Pe(W)	55,5				

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K90L-2		Poles	2		Power	2,2 kW		IE:3
Voltage	400	V	Current	4,3	A	Frequency	50,0 Hz		
Speed	2909	r/min	Duty	S1		Connection	Y		
Ins.class	F		Weight	36	kg				

No Load Curve



VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

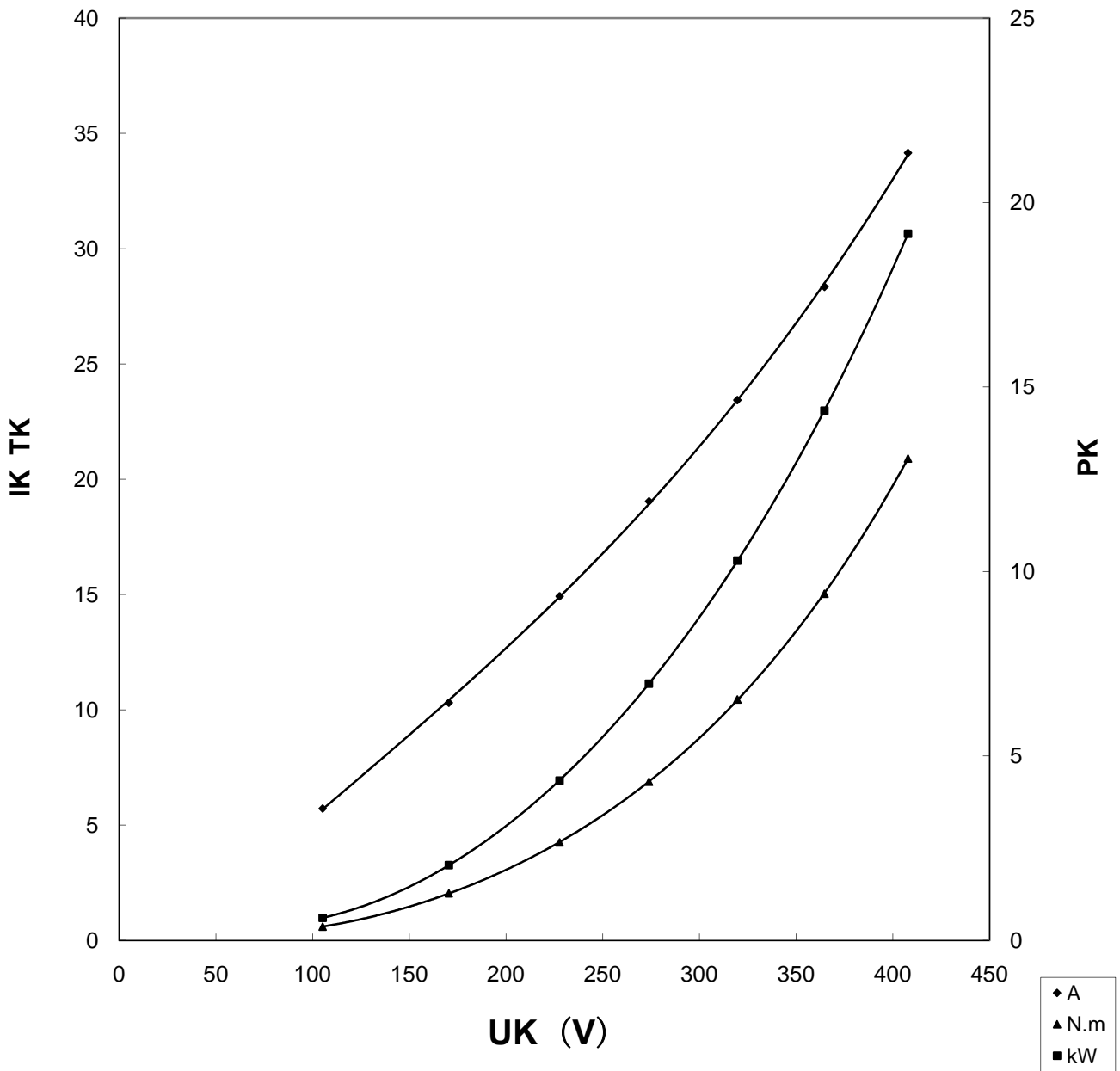
Type	K90L-2		Poles	2		Power	2,2		IE:3	kW
Voltage	400	V	Current	4,3	A	Frequency	50,0		Hz	
Speed	2909	r/min	Duty	S1		Connection	Y			
Ins.class	F		Weight	36	kg	IP55				
LOCKED ROTOR TEST										
VOL	mul.	lk1	lk2	lk3	mul.	W1	W2	mul.	Torque (kg.m)	
407,8	1,0	3,405	3,458	3,383	10,0	344,1	1571,5	10,0	2,13	
364,6	1,0	2,828	2,869	2,807	10,0	266,1	1169,8	10,0	1,53	
319,6	1,0	2,341	2,371	2,318	10,0	183,8	845,5	10,0	1,07	
273,9	1,0	1,904	1,927	1,882	10,0	111,6	584,2	10,0	0,70	
227,7	1,0	1,495	1,509	1,473	10,0	57,9	375,1	10,0	0,43	
170,4	1,0	1,031	1,040	1,022	10,0	15,9	188,1	10,0	0,21	
105,2	1,0	0,571	0,573	0,571	10,0	-0,2	61,0	10,0	0,06	
data calculation of locked rotor										
Uk	IK	PK	TK	LOGUk	LOGIk	LOGPk	LOGTk			
V	A	kW	N.m							
407,79	34,16	19,156	20,90	2,6104	1,5335	1,2823	1,3201			
364,63	28,35	14,359	15,04	2,5619	1,4525	1,1571	1,1772			
319,58	23,43	10,293	10,45	2,5046	1,3698	1,0125	1,0191			
273,89	19,04	6,958	6,88	2,4376	1,2798	0,8425	0,8377			
227,68	14,92	4,330	4,25	2,3573	1,1738	0,6365	0,6281			
170,42	10,31	2,040	2,04	2,2315	1,0131	0,3096	0,3094			
105,16	5,72	0,608	0,59	2,0218	0,7573	-0,2161	-0,2257			
performance collection of locked rotor										
at rated volts		at rated current		at 2.5 times rated current		at 100V				
VOLTS (V)		400		84,976		173,5		100,0		
AMPS (A)		33,1		4,3		10,8		5,23		
INPUT (kW)		18,29				2,5		0,281		
TORQUE (N.m)		19,84								

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K90L-2		Poles	2		Power	2,2	IE:3 kW
Voltage	400	V	Current	4,3	A	Frequency	50,0	Hz
Speed	2909	r/min	Duty	S1		Connection	Y	
Ins.class		F	Weight	36	kg			IP55

Locked Rotor Curve



VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K90L-2		Poles	2		Power	2,2	kW	IE:3	
Voltage	400	V	Current	4,3	A	Frequency	50	Hz		
Speed	2909	r/min	Duty	S1		Connection	Y			
Ins.class	F		Weight	36	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	
9,40	400,6	2,143	2,155	2,105	2	413,6	867,9	2	29,1	—	45,6	44,7	—	—	—	—	—	—	—	—	—	9,5
10,10	400,3	2,129	2,153	2,109	2	411,5	866,1	2	28,0	—	43,6	42,7	—	—	—	—	—	—	—	—	—	9,6
10,41	400,5	2,138	2,159	2,112	2	412,3	869,0	2	27,5	—	43,2	42,3	—	—	—	—	—	—	—	—	—	9,8
11,10	399,9	2,138	2,153	2,102	2	411,1	864,7	2	27,7	—	43,0	42,1	—	—	—	—	—	—	—	—	—	9,7
The average of the last three		4,265		A		2556,44		W	27,7	—	43,3	42,1	—	—	—	—	—	—	—	—	—	9,7

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				
RESISTANC	2,141	2,134	2,129	2,122	2,117	2,113				

WINDING RESISTANCE(COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	°C					
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	1,8225	1,8220	1,8230	1,823	1,822	7,1 °C

resistance value at 0 sec (Ω)

2,163450

calculation value of temp.rising

42,77 K

30 S (Ω)

2,140500

calculation value of temp.rising

39,72 K

full load curent

4,25 A

modify value of temp. rising

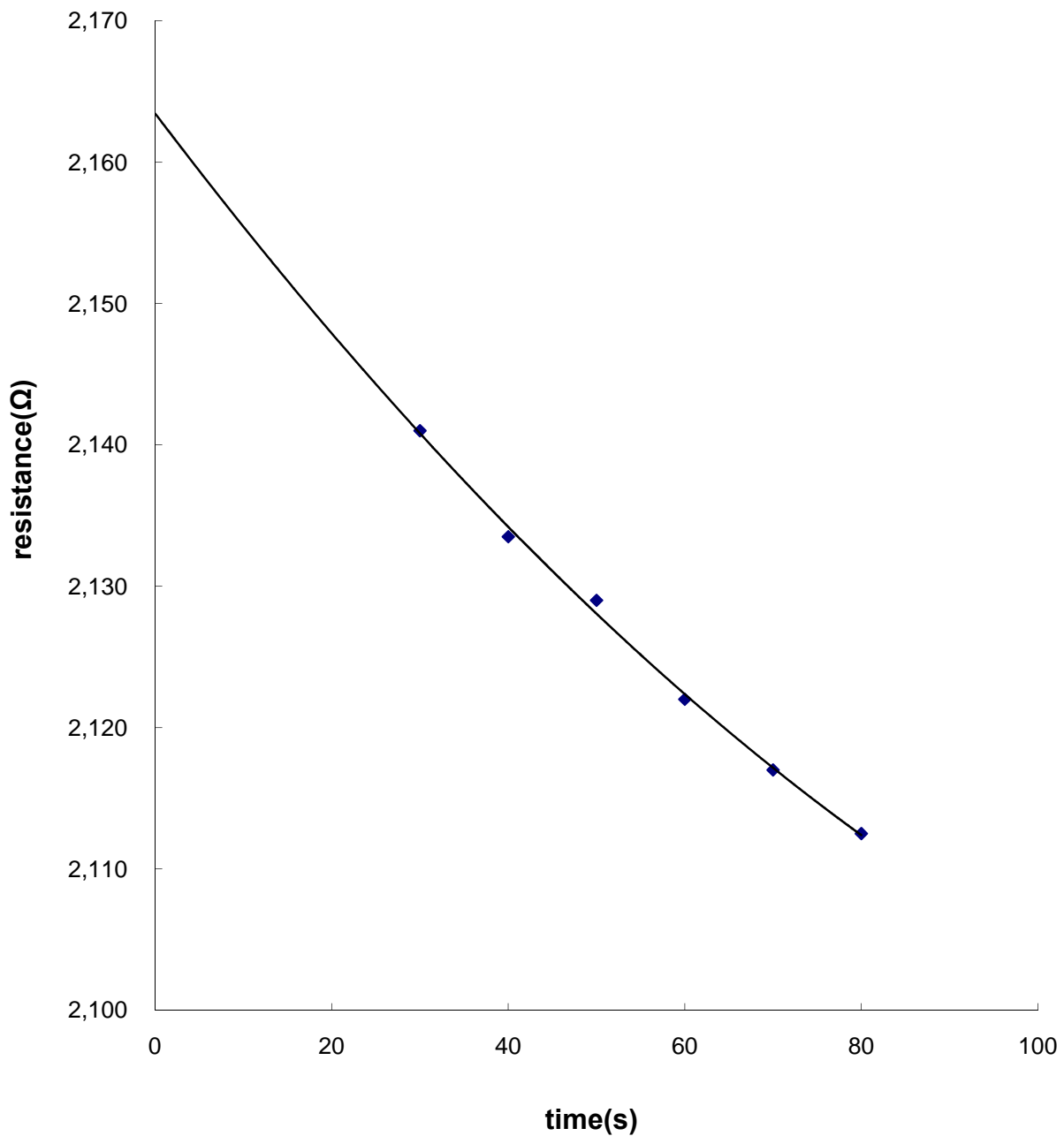
39,48 K

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K90L-2		Poles	2		output Power	2,2	IE:3 kW
Voltage	400	V	Current	4,3	A	Frequency	50,0	Hz
Speed	2909	r/min	Duty	S1		Connection	Y	
Ins.class		F	Weight	36	kg		IP55	

RESISTANCE CURVE



VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

											IE:3	
Type	K90L-2		Poles	2		Power	2,2		kW			
Voltage	400	V	Current	4,3	A	Frequency	50,0		Hz			
Speed	2909	r/min	Duty	S1		Connection	Y					
Ins.class	F		Weight	36	kg	IP55						
LOAD TEST												
V	HZ	I1	I2	I3	mul.	W1	W2	mul.	r/min	Resistance Ω	Temperature °C	Torqu N.m
400,3	50,00	2,508	2,522	2,475	2	519,5	1018,3	2	2895,4	2,0513	37,5	8,66
399,9	50,00	2,303	2,310	2,270	2	464,7	931,8	2	2906,0	2,0611	38,8	7,90
399,6	50,00	2,122	2,143	2,105	2	412,0	864,6	2	2915,0	2,0687	39,8	7,21
400,0	50,00	1,680	1,695	1,647	2	275,7	681,9	2	2938,4	2,0709	40,1	5,40
400,3	50,00	1,276	1,306	1,240	2	129,5	514,4	2	2960,6	2,0672	39,6	3,54
400,2	50,00	1,002	1,003	0,948	2	-5,3	359,6	2	2980,0	2,0596	38,6	1,77
400,1	50,0	1,930	1,948	1,942	1,0	-103,9	624,1	1	2986,4	2,0559	38,1	1,18
400,0	50,0	1,798	1,802	1,800	1,0	-293,8	430,8	1	3000,0	2,0242	33,9	0,00
slope A= 0,92623		intercept B= 1,96			relative coefficient r= 0,994							
LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pz W	N.m	EFF %	P.F	
150,0	3300	6,27	3941,2	269,6	4,982	180,1	112,4	674,4	11,0	83,73	0,907	
125,0	2750	5,25	3246,4	189,1	4,003	120,2	77,5	499,0	9,1	84,71	0,892	
100,0	2200	4,25	2557,0	123,8	3,037	72,2	48,7	357,0	7,2	86,04	0,868	
75,0	1650	3,33	1904,2	76,1	2,180	38,7	27,0	254,0	5,4	86,65	0,824	
50,0	1100	2,54	1284,9	44,3	1,403	16,6	11,7	185,0	3,6	85,61	0,729	
25,0	550	1,96	695,4	26,2	0,701	4,3	2,9	145,6	1,8	79,09	0,513	

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K90L-2		Poles	2		output Power	2,2 kW		IE:3
Voltage	400	V	Current	4,3	A	Frequency	50,0 Hz		
Speed	2909	r/min	Duty	S1		Connection	Y		
Ins.class	F		Weight	36	kg		IP55		

LOAD CURVE

