

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K90S-4	Poles	4	Power	1,1	kW	IE:3
Voltage	400 V	Current	2,4 A	Frequency	50	Hz	
Speed	1443 r/min	Duty	S1	Connection	Y		
Ins.class	F	Weight	32 kg		IP55		
MAJOR CONTENTS				TEST VALUE			
95,0 °C PHASE RESISTANCE OF WINDING	Ω						4,0374
NO LOAD CURRENT	A						1,226
NO LOAD INPUT	W						68,43
CORE LOSS(Pfe)	W						39,86
WINDAGE FRICTION LOSS(Pfw)	W						13,73
STATOR WINDING LOSS(Pcu1)	W						63,27
ROTOR WINDING LOSS(Pcu2)	W						45,38
STRAY LOAD LOSS(Ps)	W						26,63
LOCKED ROTOR CURRENT	A						16,401
LOCKED ROTOR INPUT @ FULL LOAD	W						5709
LOCKED ROTOR TORQUE	N.m						18,3
PULL OUT TORQUE	N.m						19,6
LOCKED ROTOR CURRENT/RATED CURRENT	P.U						6,77
LOCKED ROTOR TORQUE/RATED TORQUE	P.U						2,48
PULL OUT TORQUE/RATED TORQUE	P.U						2,65
FULL LOAD TORQUE	N.m						7,3
FULL LOAD CURRENT	A						2,423
FULL LOAD SLIP	%						3,825
INPUT @ FULL LOAD	kW						1,290
FULL LOAD SPEED	r/min						1442,6
EFFICIENCY @ FULL LOAD	%						85,30
EFFICIENCY @ 75% LOAD	%						86,06
POWER FACTOR @ FULL LOAD							0,768
STATOR WINDING TEMPERATURE RISE	K						30
D.E. BEARINGS TEMPERATURE BY PT100	°C						31,3
STATOR WINDING TEMPERATURE	°C						37,2
High voltage test	V	1800				Imin	
Insulation resistance	MΩ						500
NOISE (LW)	dB(A)						56
VIBRATION	mm/s						0,3

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NO LOAD TEST

VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
488,2	1	50	2,060	2,148	2,250	1	-395,0	560,1	1	34,0	3,2911
443,2	1	50	1,527	1,570	1,645	1	-270,9	370,8	1	34,0	3,2911
399,8	1	50	1,200	1,214	1,259	1	-195,8	264,1	1	34,0	3,2911
353,6	1	50	0,963	0,963	0,980	1	-140,0	192,0	1	33,9	3,2899
302,1	1	50	0,769	0,764	0,768	1	-93,9	134,4	1	33,9	3,2899
244,3	1	50	0,588	0,584	0,582	1	-54,9	86,5	1	33,8	3,2887
199,8	1	50	0,467	0,465	0,461	1	-32,5	58,9	1	33,7	3,2874
147,5	1	50	0,342	0,340	0,335	1	-13,7	34,8	1	33,6	3,2862
82,3	1	50	0,219	0,219	0,215	1	0,0	15,8	1	33,4	3,2838

data calculation of no load

V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'
122,1%	1,22	2,152	165,1	1,490	45,74	119,36
110,8%	1,11	1,581	99,9	1,227	24,67	75,23
99,9%	1,00	1,224	68,3	0,999	14,80	53,50
88,4%	0,88	0,969	52,0	0,781	9,27	42,73
75,5%	0,76	0,767	40,5	0,570	5,80	34,70
61,1%	0,61	0,585	31,6	0,373	3,38	28,22
49,9%	0,50	0,464	26,4	0,249	2,13	24,27
36,9%	0,37	0,339	21,1	0,136	1,13	19,97
20,6%	0,21	0,218	15,8	0,042	0,47	15,33

RESULTS AT: 400 V

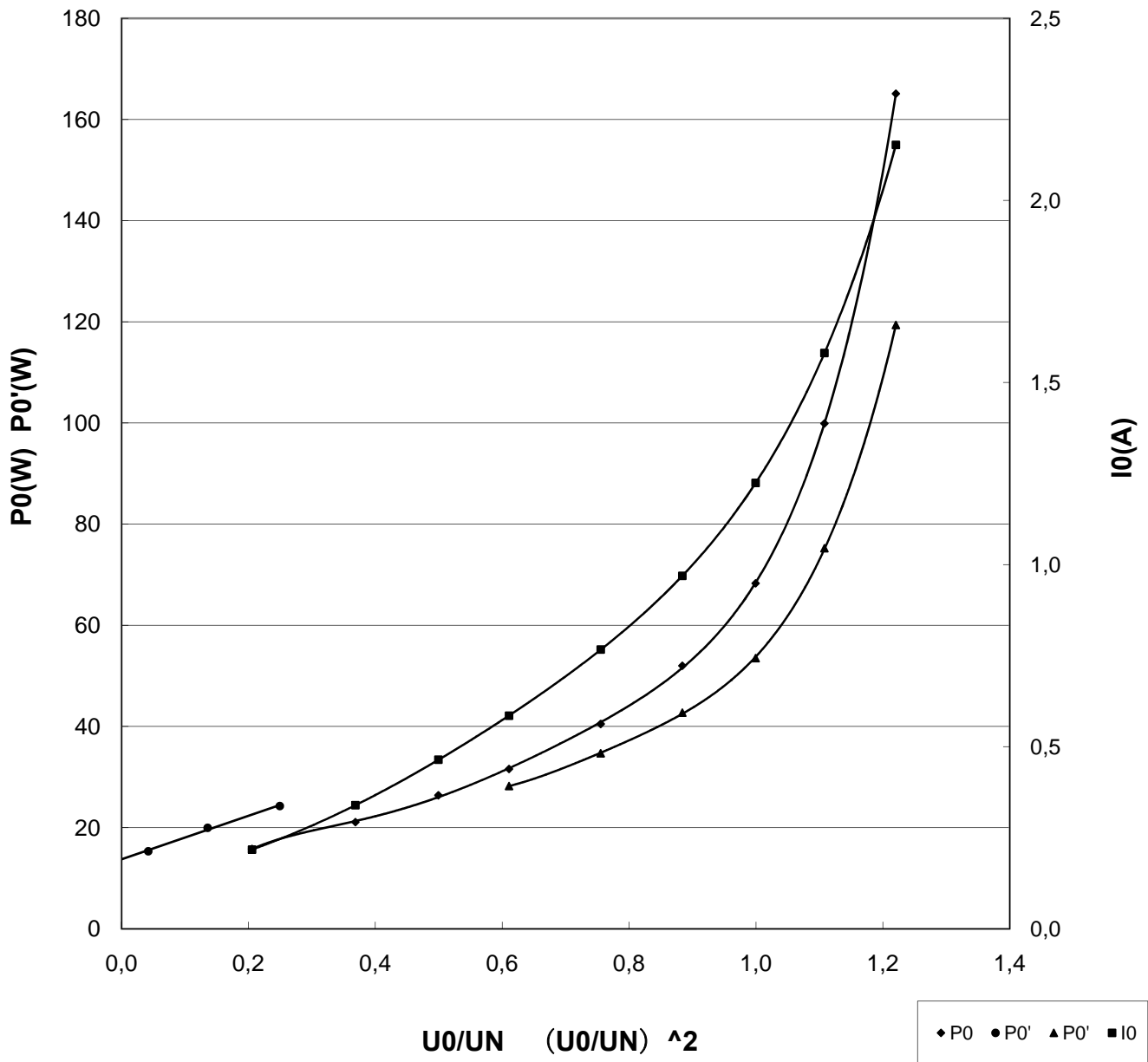
N.L.AMP	1,23	N.L.LOSS(W)	68,43	Pw(W)	13,7	Pe(W)	39,9		
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Type	K90S-4		Poles	4		Power	1,1 kW		IE:3
Voltage	400	V	Current	2,4	A	Frequency	50,0 Hz		
Speed	1443	r/min	Duty	S1		Connection	Y		
Ins.class	F		Weight	32	kg		IP55		

No Load Curve



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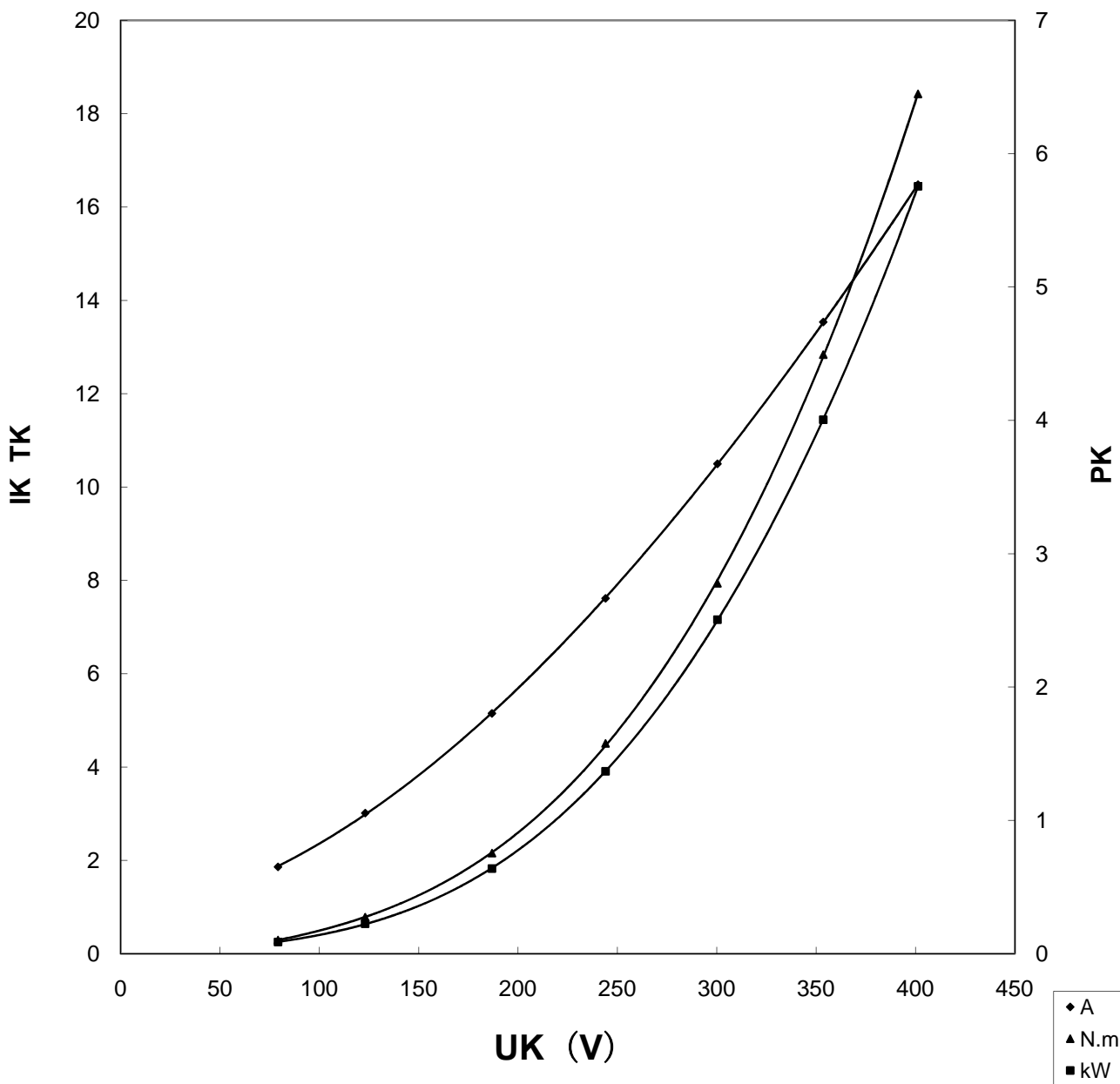
Type	K90S-4		Poles	4		Power	1,1		IE:3	kW
Voltage	400	V	Current	2,4	A	Frequency	50,0		Hz	
Speed	1443	r/min	Duty	S1		Connection	Y			
Ins.class		F	Weight	32	kg		IP55			
LOCKED ROTOR TEST										
VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu (kg.m)	
401,3	1,0	3,296	3,299	3,293	5,0	0,0	1151,1	5,0	1,88	
353,6	1,0	2,709	2,712	2,700	5,0	-25,5	826,4	5,0	1,31	
300,3	1,0	2,100	2,107	2,092	5,0	-34,8	535,8	5,0	0,81	
244,0	1,0	1,522	1,533	1,513	5,0	-35,1	308,8	5,0	0,46	
186,8	1,0	2,575	2,590	2,559	2,0	-67,6	387,2	2,0	0,22	
123,1	1,0	1,507	1,511	1,504	2,0	-31,3	143,9	2,0	0,08	
79,2	1,0	0,931	0,932	0,929	2,0	-12,6	56,5	2,0	0,03	
data calculation of locked rotor										
Uk	Ik	Pk	Tk			LOGUk	LOGIk	LOGPk	LOGTk	
V	A	kW	N.m							
401,26	16,48	5,756	18,42			2,6034	1,2169	0,7601	1,2654	
353,58	13,54	4,005	12,84			2,5485	1,1315	0,6025	1,1085	
300,32	10,50	2,505	7,94			2,4776	1,0211	0,3988	0,8997	
244,00	7,61	1,369	4,51			2,3874	0,8816	0,1362	0,6540	
186,84	5,15	0,639	2,16			2,2715	0,7118	-0,1944	0,3336	
123,05	3,01	0,225	0,78			2,0901	0,4791	-0,6474	-0,1057	
79,16	1,86	0,088	0,29			1,8985	0,2698	-1,0565	-0,5317	
performance collection of locked rotor										
	at rated volts		at rated current		at 2.5 times rated current		at 100V			
VOLTS (V)	400		100,431		217,4		100,0			
AMPS (A)	16,4		2,4		6,1		2,43			
INPUT (kW)	5,71				0,8		0,162			
TORQUE (N.m)	18,28									

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Voltage	400	V	Current	2,4	A	Frequency	50,0	Hz
Speed	1443	r/min	Duty	S1		Connection	Y	
Ins.class		F	Weight	32	kg			IP55

Locked Rotor Curve



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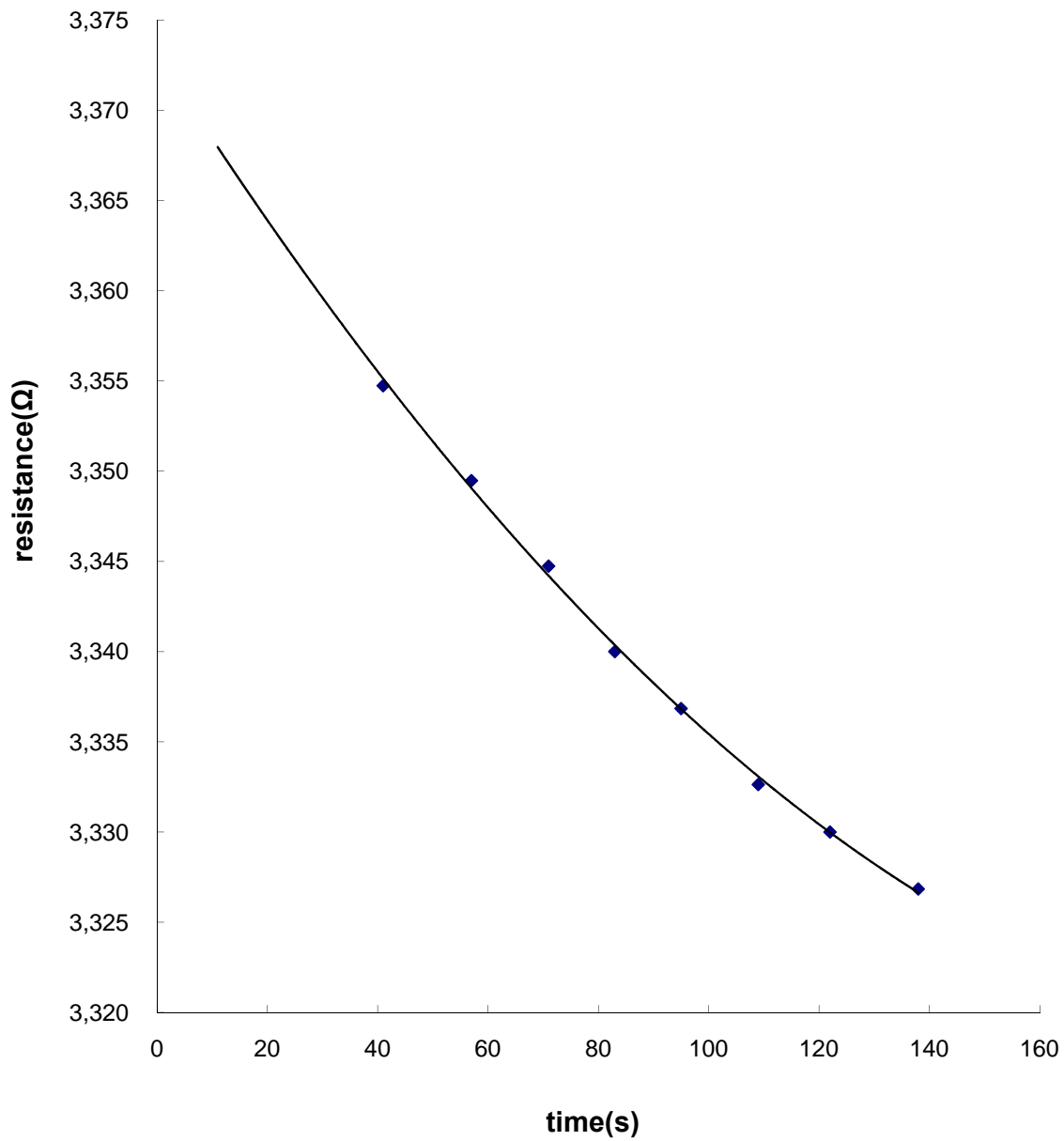
Type	K90S-4		Poles	4		Power	1,1 kW		IE:3													
Voltage	400	V	Current	2,4	A	Frequency	50	Hz														
Speed	1443	r/min	Duty	S1		Connection	Y															
Ins.class	F		Weight	32	kg	IP55																
TEMPERATURE RISE TEST																						
TIME (h:min)	V	I1	I2	I3	mul.	W1	W2	mul.	T1 °C	T2 °C	T3 °C	T4 °C	T5 °C	T6 °C	T7 °C	T8 °C	T9 °C	T10 °C	T11 °C	T12 °C	T13 °C	
13,30	400,6	2,524	2,491	2,577	1	365,1	970,1	1	28,6	—	29,8	36,1	—	—	—	—	—	—	—	—	—	7,1
13,59	400,3	2,522	2,487	2,544	1	362,7	968,4	1	29,5	—	33,3	36,7	—	—	—	—	—	—	—	—	—	7,2
14,29	400,3	2,503	2,466	2,522	1	357,2	959,7	1	31,7	—	33,9	37,2	—	—	—	—	—	—	—	—	—	7,5
15,00	400,5	2,493	2,458	2,514	1	355,2	956,4	1	31,3	—	33,9	37,2	—	—	—	—	—	—	—	—	—	7,5
Average of the last three		2,501		A		1319,87		W		31,3	—	33,7	37,2	—	—	—	—	—	—	—	—	7,4
T1 T2 : DE BEARING TEMPERATURE									T11 : CORE TEMPERATURE						T12: FRAME TEMPERATURE							
T3~T10 : DE WINDING TEMPERATURE									T13 : AMBIENT TEMPERATURE													
WINDING RESISTANCE (HOT) AT END OF TEMPERATURE RISE TEST																						
TIME (S)	41	57	71	83	95	109	122	138														
RESISTANCE (Ω)	3,3547	3,3495	3,3447	3,3400	3,3368	3,3326	3,3300	3,3268														
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.											
	2,9847		2,9842		2,9868		2,985		2,9842		9 °C											
resistance value at 0 sec (Ω)				3,37315				calculation value of temp.rising				33,40				K						
30 S (Ω)				3,35842				calculation value of temp.rising				32,20				K						
full load current				2,42 A				modify value of temp. rising				30,23				K						

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Ins.class	F	Weight	32 kg		IP55	

RESISTANCE CURVE



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Speed	1443 r/min	Duty	S1	Connection	Y	Hz
Ins.class	F	Weight	32 kg		IP55	

LOAD CURVE

