

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K315L-4	Poles	4	Power	200,0 kW	IE:3
Voltage	400 V	Current	333,0 A	Frequency	50 Hz	
Speed	1483 r/min	Duty	S1	Connection	Δ	
Ins.class	F	Weight	1521 kg		IP55	
MAJOR CONTENTS			TEST VALUE			
95,0 °C	PHASE RESISTANCE OF WINDING	Ω				0,0207
	NO LOAD CURRENT	A				71,631
	NO LOAD INPUT	W				1715,35
	CORE LOSS(Pfe)	W				860,63
	WINDAGE FRICTION LOSS(Pfw)	W				752,54
	STATOR WINDING LOSS(Pcu1)	W				2288,88
	ROTOR WINDING LOSS(Pcu2)	W				2344,89
	STRAY LOAD LOSS(Ps)	W				1832,63
	LOCKED ROTOR CURRENT	A				2210,237
	LOCKED ROTOR INPUT @ FULL LOAD	W				457784
	LOCKED ROTOR TORQUE	N.m				2720,8
	PULL OUT TORQUE	N.m				3531,0
	LOCKED ROTOR CURRENT/RATED CURRENT	P.U				6,64
	LOCKED ROTOR TORQUE/RATED TORQUE	P.U				2,11
	PULL OUT TORQUE/RATED TORQUE	P.U				2,74
	FULL LOAD TORQUE	N.m				1288,7
	FULL LOAD CURRENT	A				333,0
	FULL LOAD SLIP	%				1,144
	INPUT @ FULL LOAD	kW				208,086
	FULL LOAD SPEED	r/min				1482,8
	EFFICIENCY @ FULL LOAD	%				96,11
	EFFICIENCY @ 75% LOAD	%				96,64
	POWER FACTOR @ FULL LOAD					0,902
	STATOR WINDING TEMPERATURE RISE	K				65
	D.E. BEARINGS TEMPERATURE BY PT100	°C				59,0
	STATOR WINDING TEMPERATURE	°C				97,3
	High voltage test	V	1800			Imin
	Insulation resistance	MΩ				500
	NOISE (LW)	dB(A)				87
	VIBRATION	mm/s				0,7

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NO LOAD TEST

VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
462,4	1	50	4,814	5,022	4,906	20	-1006,5	1115,9	20	83,6	0,01331
430,5	1	50	3,995	4,216	4,070	20	-783,4	877,12	20	83,1	0,01329
400,2	1	50	3,499	3,692	3,562	20	-633,5	719,32	20	82,7	0,01327
352,1	1	50	2,920	3,098	2,972	20	-462,1	536,9	20	82,2	0,01325
308,3	1	50	2,486	2,612	2,535	20	-334,2	401,53	20	81,9	0,01324
253,2	1	50	1,974	2,100	2,015	20	-212,4	272,1	20	81,6	0,01323
199,7	1	50	3,151	3,142	3,210	10	-232,5	335,2	10	80,9	0,01320
166,0	1	50	2,590	2,579	2,636	10	-145,7	238,9	10	80,7	0,01319
128,4	1	50	2,023	2,013	2,062	10	-70,6	156,9	10	80,5	0,01318
99,5	1	50	1,659	1,650	1,695	10	-28,2	110,6	10	80,2	0,01317

data calculation of no load

V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'
115,6%	1,16	98,280	2188,2	1,336	192,87	1995,32
107,6%	1,08	81,873	1874,4	1,158	133,64	1740,73
100,1%	1,00	71,687	1716,4	1,001	102,32	1614,06
88,0%	0,88	59,933	1496,0	0,775	71,41	1424,57
77,1%	0,77	50,887	1346,7	0,594	51,43	1295,24
63,3%	0,63	40,593	1193,2	0,401	32,70	1160,54
49,9%	0,50	31,677	1026,8	0,249	19,87	1006,95
41,5%	0,42	26,017	931,9	0,172	13,39	918,47
32,1%	0,32	20,327	863,4	0,103	8,17	855,27
24,9%	0,25	16,680	823,5	0,062	5,50	818,05

RESULTS AT: 400 V

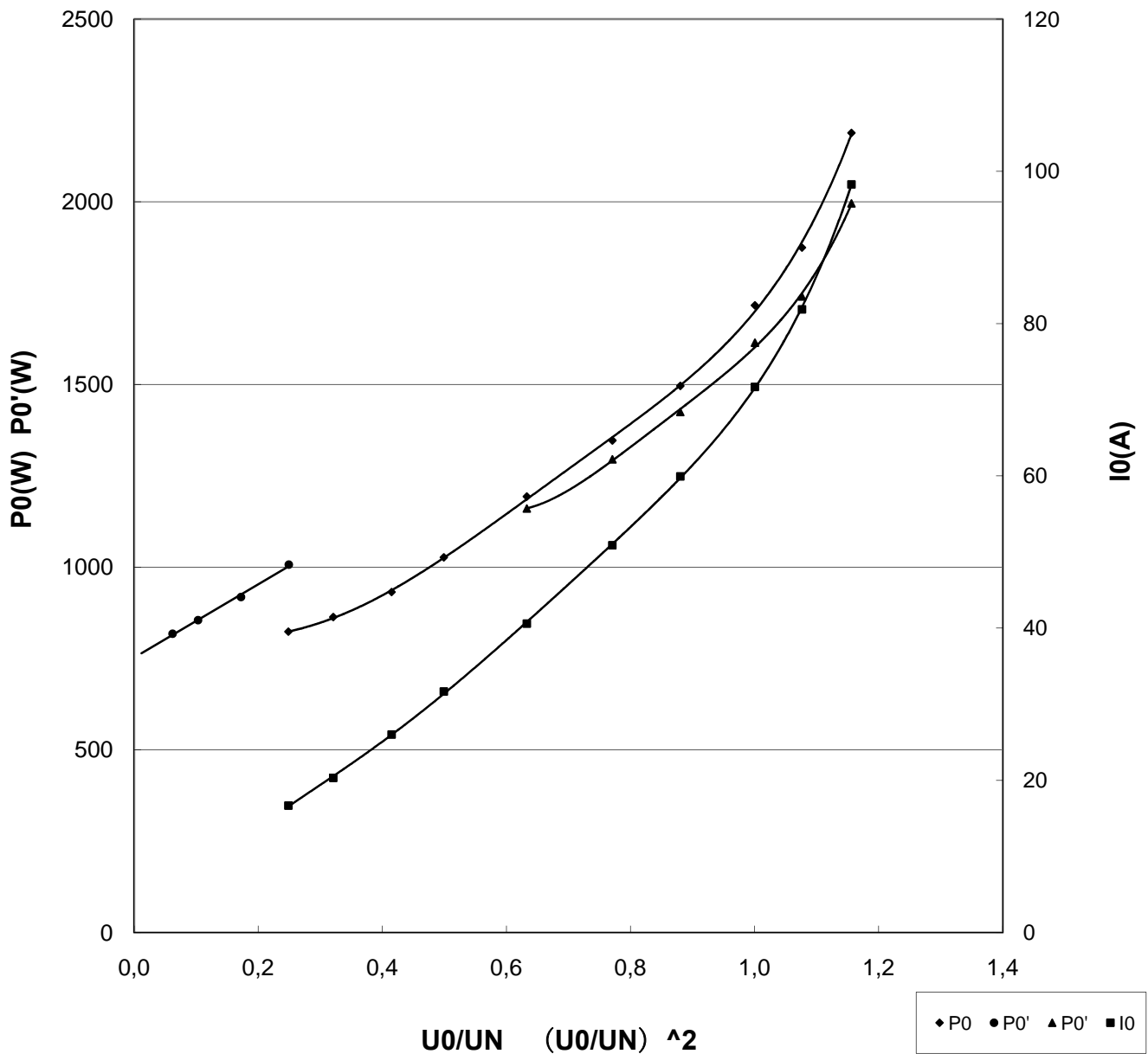
N.L.AMP	71,63	N.L.LOSS(W)	1715,35	Pw(W)	752,5	Pe(W)	860,6	P.F	0,03
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Voltage	400	V	Current	333,0	A	Frequency	50,0 Hz		
Speed	1483	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	1521	kg				

No Load Curve



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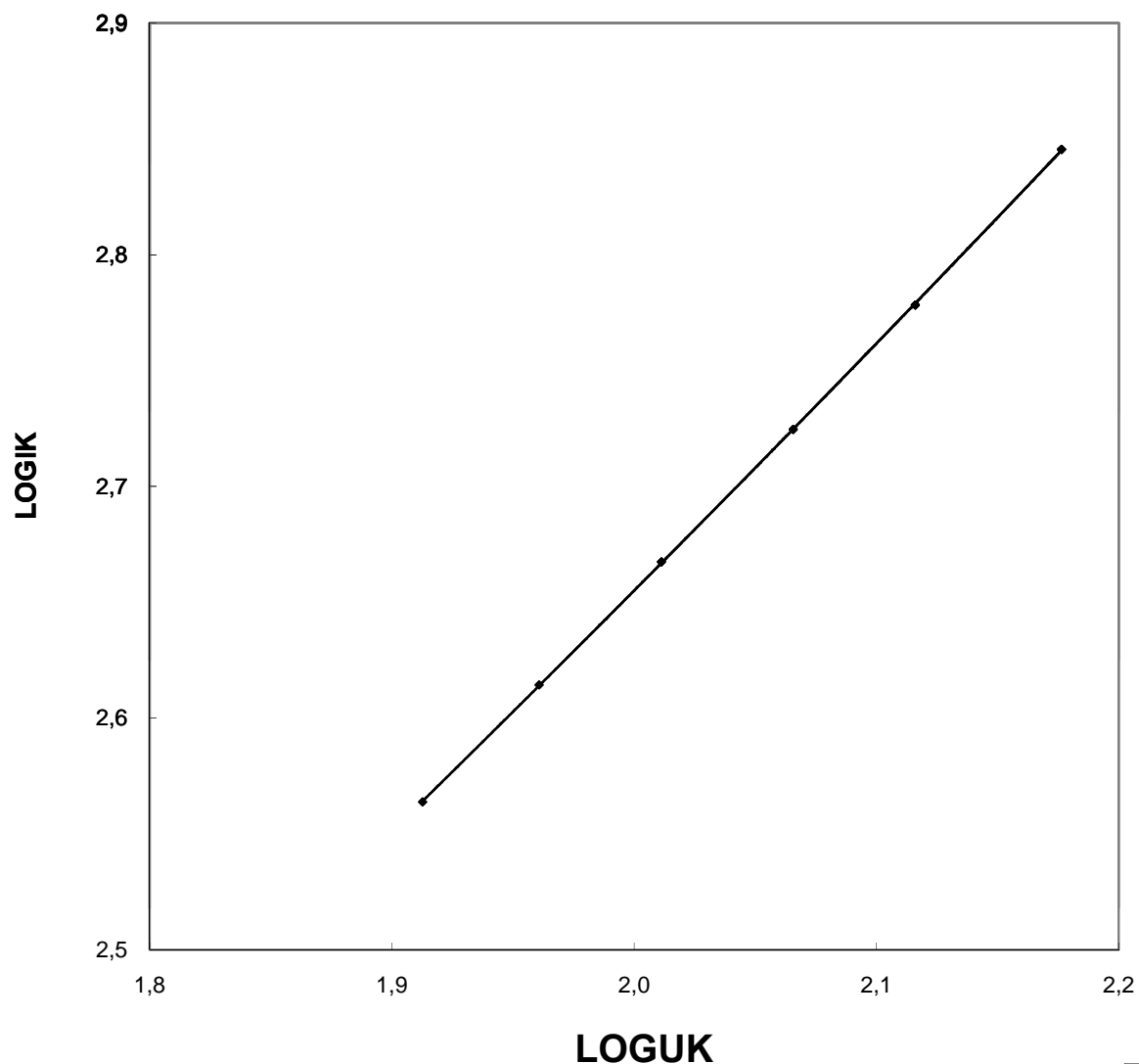
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Speed	1483	r/min	Duty	S1		Connection	Δ		Hz
Ins.class	F		Weight	1521	kg	IP55			
LOCKED ROTOR TEST									
VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu (kg.m)
150,1	1,0	3,478	3,482	3,550	200,0	-113,1	388,9	200,0	27,90
130,6	1,0	2,980	2,984	3,039	200,0	-86,0	288,7	200,0	20,50
116,3	1,0	2,635	2,636	2,685	200,0	-68,2	227,2	200,0	15,90
102,6	1,0	2,309	2,311	2,354	200,0	-52,7	175,4	200,0	12,10
91,4	1,0	2,043	2,045	2,083	200,0	-41,7	137,7	200,0	9,60
81,8	1,0	3,640	3,640	3,708	100,0	-68,0	218,9	100,0	7,60
data calculation of locked rotor									
Uk	IK	PK	TK		LOGUk	LOGIk	LOGPk	LOGTk	
V	A	kW	N.m						
150,11	700,66	55,160	273,42		2,1764	2,8455	1,7416	2,4368	
130,63	600,21	40,540	200,90		2,1160	2,7783	1,6079	2,3030	
116,32	530,42	31,800	155,82		2,0656	2,7246	1,5024	2,1926	
102,63	464,99	24,540	118,58		2,0113	2,6674	1,3899	2,0740	
91,37	411,48	19,200	94,08		1,9608	2,6143	1,2833	1,9735	
81,79	366,29	15,090	74,48		1,9127	2,5638	1,1787	1,8720	
performance collection of locked rotor									
	at rated volts		at rated current		at 2.5 times rated current		at 100V		
VOLTS (V)	400		75,151		177,6		100,0		
AMPS (A)	2210,2		334,0		835,0		452,79		
INPUT (kW)	457,78				78,4		23,160		
TORQUE (N.m)	2720,80								

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Speed	1483 r/min	Duty	S1	Connection	Δ	Hz
Ins.class	F	Weight	1521 kg			

LOCKED



◆ LOGIK

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Type	K315L-4			Poles	4			Power	200 kW			IE:3
Voltage	400 V			Current	333,0 A			Frequency	50 Hz			
Speed	1483 r/min			Duty	S1			Connection	Δ			
Ins.class	F			Weight	1521 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
11,59	400,4	3,353	3,366	3,424	100	773,7	1343	100	47,2	—	78,5	79,1	—	—	—	—	—	—	48,9	—	11,9
12,30	400,5	3,338	3,350	3,407	100	771,6	1337	100	50,4	—	83,0	83,4	—	—	—	—	—	—	51,8	—	12,2
13,00	400,5	3,356	3,367	3,425	100	776,7	1344	100	53,0	—	86,4	86,9	—	—	—	—	—	—	53,7	—	12,3
13,30	400,5	3,329	3,341	3,398	100	771,3	1333	100	54,9	—	89,4	89,4	—	—	—	—	—	—	55,4	—	12,4
13,59	400,4	3,340	3,352	3,409	100	774,4	1338	100	57,1	—	93,9	93,8	—	—	—	—	—	—	57,9	—	12,6
14,30	400,4	3,313	3,325	3,382	100	768,8	1327	100	58,0	—	96,2	96,8	—	—	—	—	—	—	58,9	—	12,4
14,58	400,1	3,346	3,357	3,414	100	774,9	1337	100	59,2	—	96,6	97,1	—	—	—	—	—	—	59,0	—	12,4
15,28	400,0	3,346	3,357	3,414	100	775,1	1337	100	59,0	—	96,8	97,3	—	—	—	—	—	—	59,2	—	12,3
The average of the last three		336,153			A	210627		W	59,0	—	96,5	97,3	—	—	—	—	—	—	59,2	—	12,4

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)	46	81	115	154	192	227	271	302		
RESISTANC	0,01317	0,01309	0,01304	0,01297	0,01293	0,01288	0,01284	0,01280		

WINDING RESISTANCE(COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0,01021	0,01023	0,01027	0,01024	0,01021	10 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
						°C

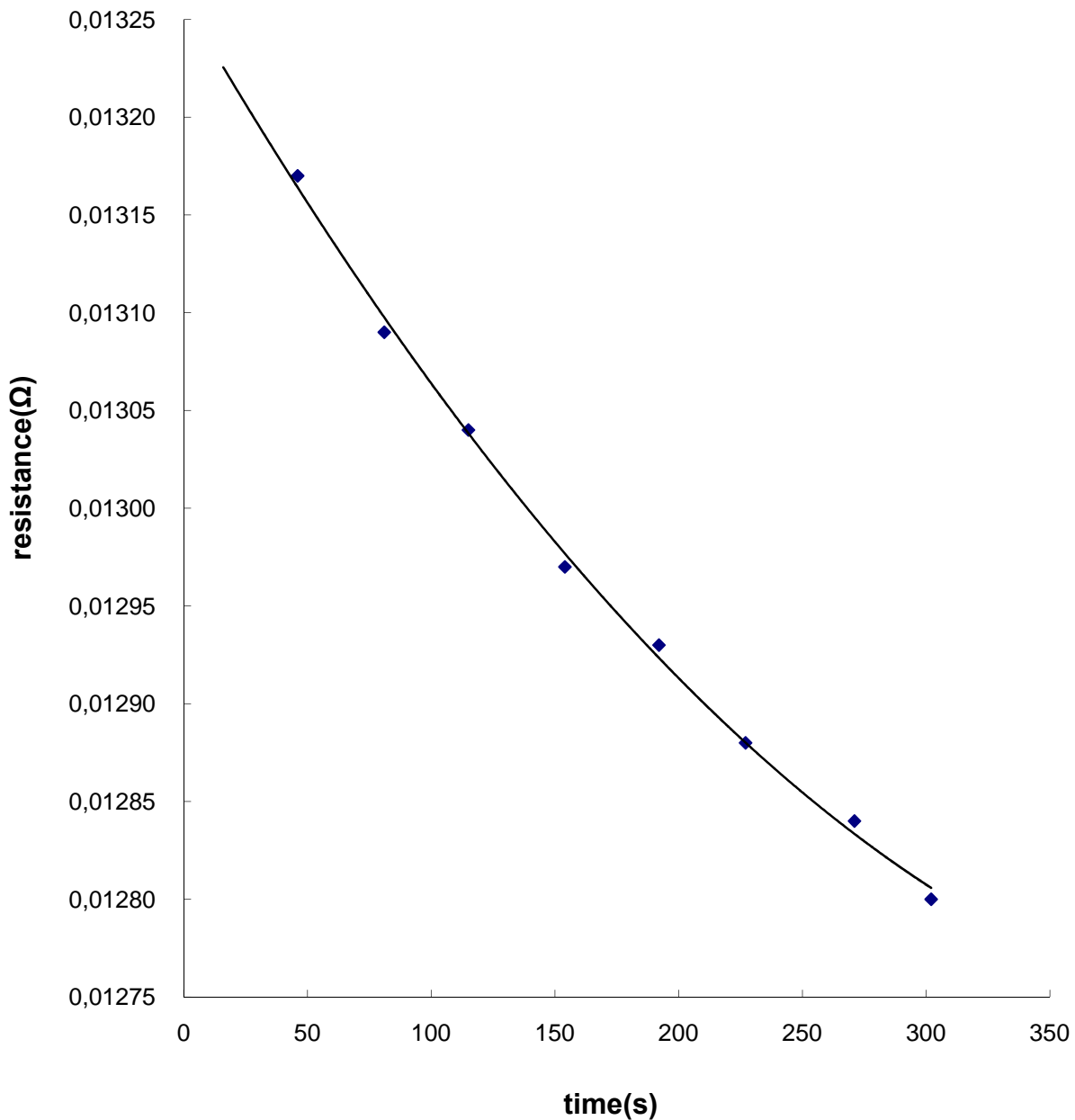
resistance value at 0 sec (Ω)	0,013260	calculation value of temp.rising	70,82 K
90 S (Ω)	0,013082	calculation value of temp.rising	66,56 K
full load curent	332,96 A	modify value of temp. rising	65,30 K

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RESISTANCE CURVE



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Voltage	400	V	Current	333,0	A	Frequency	50,0 Hz		
Speed	1483	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	1521	kg		IP55		

LOAD CURVE

