

**VALIADIS S.A.****ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR**

<b>Type</b>	K315L-6		<b>Poles</b>	6		<b>Power</b>	110,0	<b>KW</b>	IE:3
<b>Voltage</b>	400	<b>V</b>	<b>Current</b>	196,5	<b>A</b>	<b>Frequency</b>	50	<b>HZ</b>	
<b>Speed</b>	991	<b>r/min</b>	<b>Duty</b>	S1		<b>Connection</b>	△		
<b>Ins.class</b>	F		<b>Weight</b>	1302	<b>Kg</b>	IP55			
MAJOR CONTENTS					TEST VALUE				
95,0 °C PHASE RESISTANCE OF WINDING					Ω	0,0383			
NO LOAD CURRENT					A	73,513			
NO LOAD INPUT					W	1894,00			
CORE LOSS(Pfe)					W	1339,55			
WINDAGE FRICTION LOSS(Pfw)					W	361,63			
STATOR WINDING LOSS(Pcu1)					W	1445,66			
ROTOR WINDING LOSS(Pcu2)					W	973,48			
STRAY LOAD LOSS(Ps)					W	1148,40			
LOCKED ROTOR CURRENT					A	1438,039			
LOCKED ROTOR INPUT @ FULL LOAD					W	375277			
LOCKED ROTOR TORQUE					N.m	2642,2			
PULL OUT TORQUE					N.m	3332,6			
LOCKED ROTOR CURRENT/RATED CURRENT					P.U	7,32			
LOCKED ROTOR TORQUE/RATED TORQUE					P.U	2,49			
PULL OUT TORQUE/RATED TORQUE					P.U	3,14			
FULL LOAD TORQUE					N.m	1060,2			
FULL LOAD CURRENT					A	196,5			
FULL LOAD SLIP					%	0,865			
INPUT @ FULL LOAD					KW	115,273			
FULL LOAD SPEED					r/min	991,3			
EFFICIENCY @ FULL LOAD					%	95,43			
EFFICIENCY @ 75% LOAD					%	95,68			
POWER FACTOR @ FULL LOAD						0,847			
STATOR WINDING TEMPERATURE RISE					K	61			
D.E. BEARINGS TEMPERATURE BY PT100					°C	53,2			
STATOR WINDING TEMPERATURE					°C	82,4			
High voltage test					V	1800	Imin		
Insulation resistance					MΩ	500			
NOISE(LW)					dB(A)	85			
VIBRATION					mm/s	0,7			

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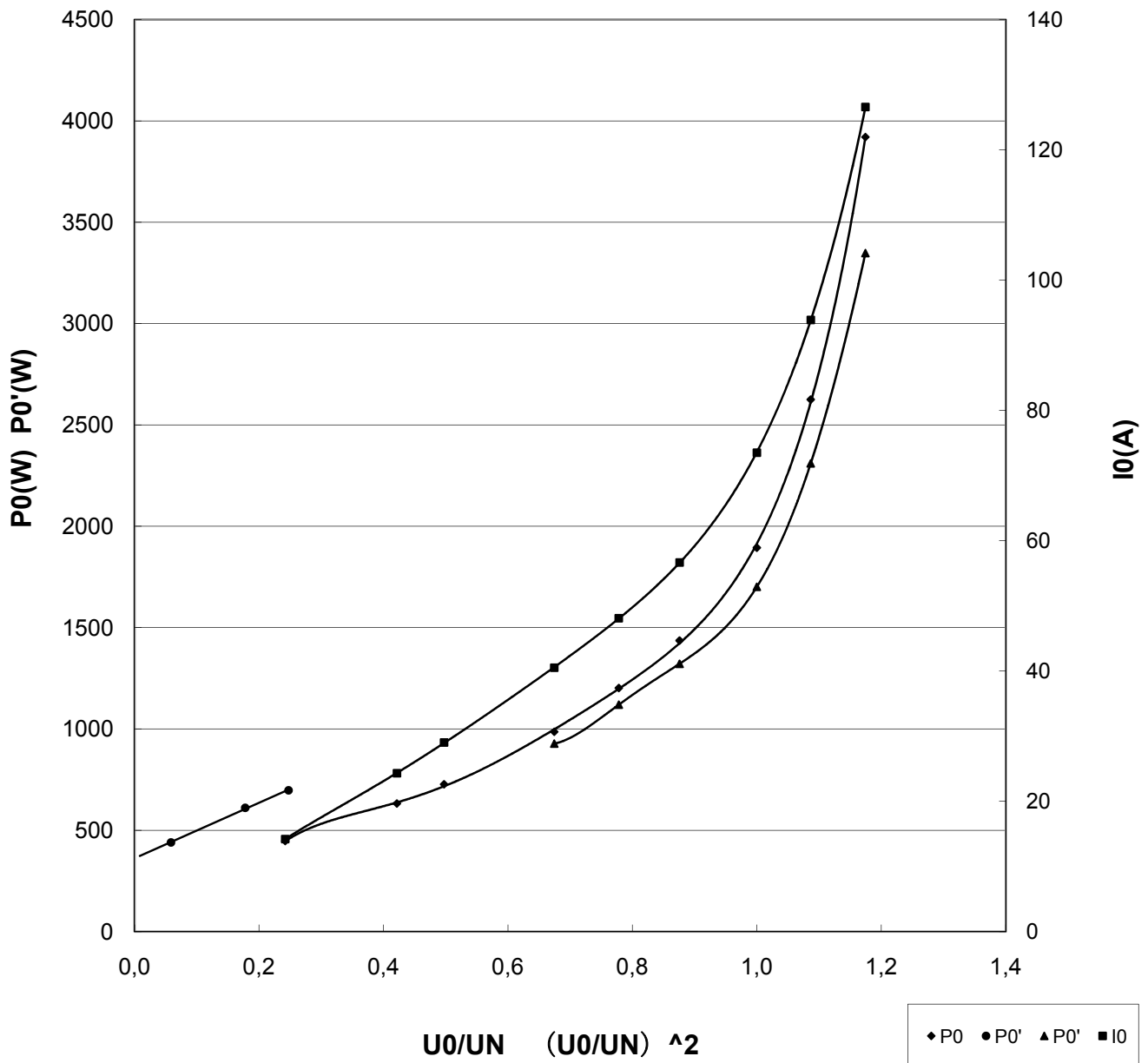
Type	K315L-6		Poles	6		Power	110,0 KW		IE:3		
Voltage	400	V	Current	196,5	A	Frequency	50 HZ				
Speed	991	r/min	Duty	S1		Connection	△				
Ins.class	F		Weight	1302	Kg			IP55			
NO LOAD TEST											
VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
469,8	1	50	2,512	2,520	2,562	50	-514,4	592,8	50	73,1	0,02382
434,6	1	50	1,869	1,864	1,900	50	-353,3	405,8	50	72,9	0,02380
400,0	1	50	3,617	3,754	3,656	20	-661,7	756,4	20	72,7	0,02379
350,3	1	50	2,788	2,878	2,833	20	-437,7	509,5	20	72,5	0,02377
311,3	1	50	2,364	2,449	2,402	20	-327,9	388	20	72,4	0,02376
269,8	1	50	1,991	2,083	2,003	20	-241,5	290,8	20	72,1	0,02374
198,9	1	50	2,876	2,920	2,910	10	-237	309,7	10	71,7	0,02371
168,6	1	50	2,419	2,450	2,427	10	-164	227,2	10	71,4	0,02369
96,8	1	50	1,439	1,378	1,446	10	-38,3	83,0	10	70,7	0,02363
data calculation of no load											
V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'					
117,4%	1,17	126,567	3920,0	1,379	572,29	3347,71					
108,7%	1,09	93,883	2625,0	1,181	314,68	2310,32					
100,0%	1,00	73,513	1894,0	1,000	192,82	1701,18					
87,6%	0,88	56,660	1436,0	0,767	114,47	1321,53					
77,8%	0,78	48,100	1202,0	0,606	82,47	1119,53					
67,4%	0,67	40,513	986,0	0,455	58,45	927,55					
49,7%	0,50	29,020	727,0	0,247	29,95	697,05					
42,2%	0,42	24,320	632,0	0,178	21,01	610,99					
24,2%	0,24	14,210	447,0	0,059	7,16	439,84					
RESULTS AT:    400            V											
N.L.AMP	73,51	N.L.LOSS(W)	1894,00	Pw(W)	361,6	Pe(W)	1339,6				

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Type	K315L-6		Poles	6		Power	110,0 KW	
Voltage	400	V	Current	196,5	A	Frequency	50,0 HZ	
Speed	991	r/min	Duty	S1		Connection	Δ	
Ins.class	F		Weight	1302	Kg		IP55	

### No Load Curve



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Voltage	400	V	Current	196,5	A	Frequency	50,0		KW
Speed	991	r/min	Duty	S1		Connection	Δ		HZ
Ins.class	F		Weight	1302	Kg	IP55			

### LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu <sub>r</sub> ( Kg.m)
212,3	1,0	3,378	3,392	3,431	200,0	-134,7	547,9	200,0	60,3
191,3	1,0	2,991	2,996	3,033	200,0	-111,5	433,4	200,0	47,2
165,1	1,0	2,514	2,513	2,549	200,0	-85,0	311,4	200,0	33,6
147,5	1,0	2,197	2,202	2,225	200,0	-68,7	242,2	200,0	25,6
128,5	1,0	3,734	3,748	3,788	100,0	-105,7	356,2	100,0	18,6
103,5	1,0	2,907	2,911	2,942	100,0	-70,0	221,4	100,0	11,3

### data calculation of locked rotor

UK	IK	PK	TK	LOGUK	LOGIK	LOGPK	LOGTK
V	A	KW	N.m				
212,32	680,07	82,640	590,94	2,3270	2,8326	1,9172	2,7715
191,26	601,35	64,380	462,56	2,2816	2,7791	1,8088	2,6652
165,05	505,02	45,280	329,28	2,2176	2,7033	1,6559	2,5176
147,47	441,62	34,700	250,88	2,1687	2,6451	1,5403	2,3995
128,53	375,63	25,050	182,28	2,1090	2,5748	1,3988	2,2607
103,47	292,00	15,140	110,74	2,0148	2,4654	1,1801	2,0443

### performance collection of locked rotor

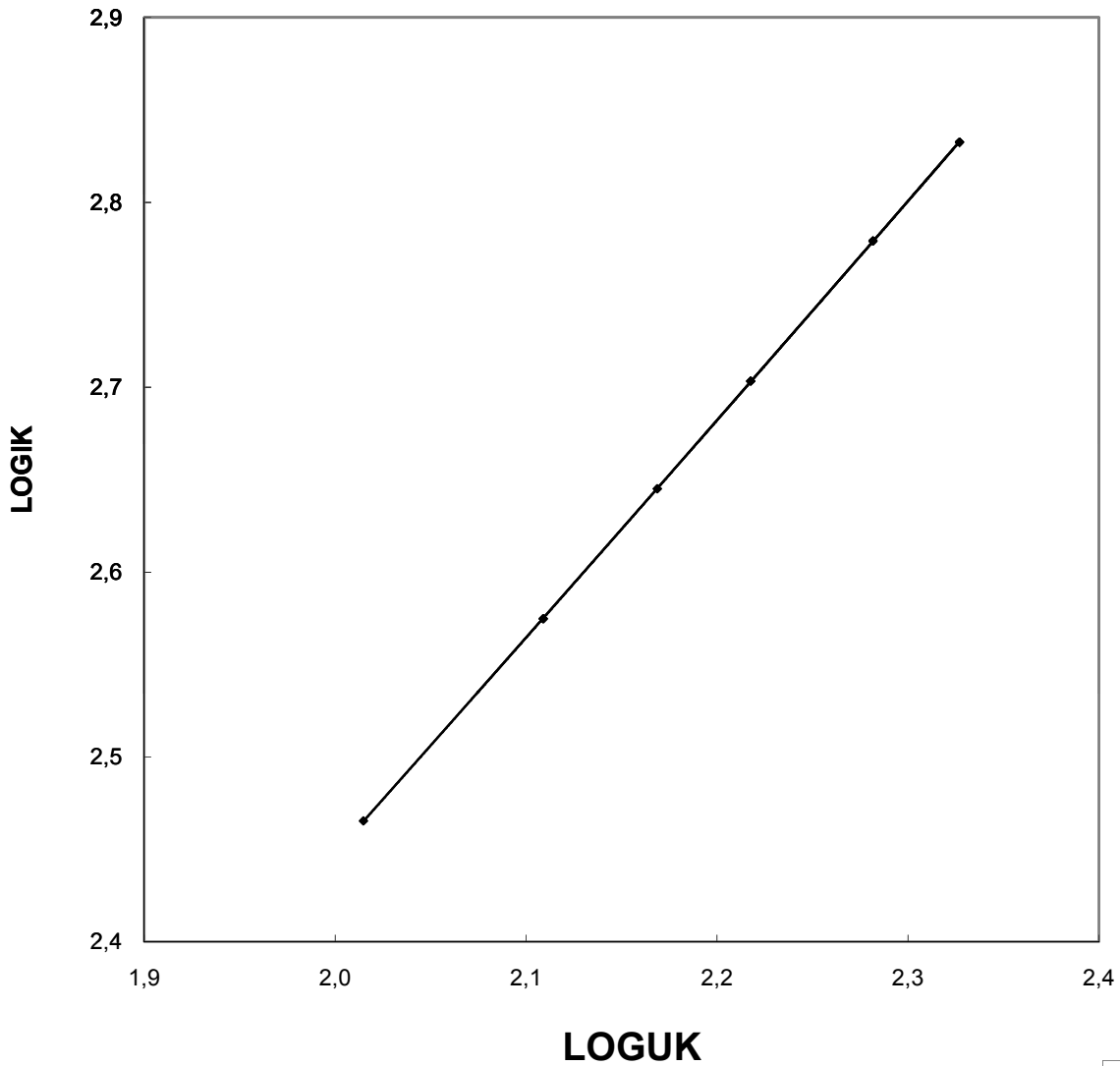
	at rated volts	at rated current	at 2.5 times rated current	at 100V
VOLTS ( V )	400	74,047	161,2	100,0
AMPS ( A )	1438,0	196,5	491,3	279,94
INPUT ( KW )	375,28		42,9	13,897
TORQUE ( N.m)	2642,25			

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Type	K315L-6	Poles	6	Power	110,0	IE:3
Voltage	400 V	Current	196,5 A	Frequency	50,0	KW
Speed	991 r/min	Duty	S1	Connection	Δ	HZ
Ins.class	F	Weight	1302 Kg		IP55	

### LOCKED



◆ LOGIK

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Type	K315L-6		Poles	6		Power	110	KW	IE:3	
Voltage	400	V	Current	196,5	A	Frequency	50	HZ		
Speed	991	r/min	Duty	S1		Connection	Δ			
Ins.class	F		Weight	1302	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
11,30	400,4	1,971	1,974	2,007	100	369,1	787,2	100	47,30	—	72,1	70,6	41,2	12,5
12,00	400,4	1,990	1,997	2,016	100	371,3	796,5	100	48,70	—	75,2	73,7	42,6	12,6
12,30	400,3	1,978	1,988	2,009	100	370,3	792,2	100	50,10	—	77,6	76,2	44,2	12,5
13,00	400,4	1,958	1,967	1,993	100	367,0	784,6	100	51,20	—	79,2	77,7	45,2	12,4
13,30	400,4	1,974	1,982	2,005	100	370,6	790,8	100	51,90	—	80,5	79,0	45,9	12,5
14,00	400,5	1,964	1,962	1,995	100	370,5	782,8	100	52,60	—	81,6	80,0	46,5	12,6
14,30	400,5	1,956	1,966	1,987	100	365,8	784,1	100	53,00	—	82,1	80,6	46,9	12,6
14,59	400,1	1,967	1,968	1,989	100	369,2	783,7	100	53,20	—	82,4	80,9	47,2	12,7
The average of the last three		197,266		A		115203		W	53,2	—	77,3	80,5	47,2	12,6

T1 : DE BEARING TEMPERATURE      T4 : CORE TEMPERATRE      T5: FRAME TEMPERATRE  
 T2~T3 : DE WINDING TEMPERATURE      T6 : AMBIENT TEMPERATURE

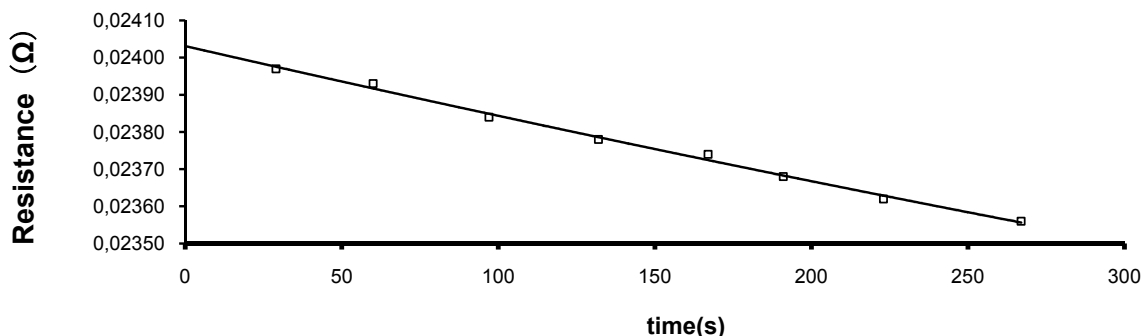
### WINDING RESISTANCE (HOT) AT END OF TEMPERATURE RISE TEST

TIME (S)	29	60	97	132	167	191	223	267				
RESISTANC	0,0240	0,0239	0,0238	0,0238	0,0237	0,0237	0,0236	0,0236				

### WINDING RESISTANCE(COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0,01898	0,01898	0,01902	0,01899	0,01898	10,7 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
						°C

resistance curve when break off electricity



resistance value at 0 sec ( Ω )	0,024031	calculation value of temp.rising	63,45	K
90 S ( Ω )	0,023859	calculation value of temp.rising	61,23	K
full load curent	196,47 A	modify value of temp. rising	61	K

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<b>Voltage</b>	400	<b>V</b>	<b>Current</b>	196,5	<b>A</b>	<b>Frequency</b>	50,0		<b>HZ</b>			
<b>Speed</b>	991	<b>r/min</b>	<b>Duty</b>	S1		<b>Connection</b>	Δ					
<b>Ins.class</b>	F		<b>Weight</b>	1302	<b>Kg</b>	IP55						
LOAD TEST												
V	HZ	I1	I2	I3	mul.	W1	W2	mul.	RPM	Resistance Ω	Temperature °C	Torque N.m
400,1	50,01	2,945	2,954	2,999	100	572,3	1184,7	100	986,4	0,0243	79,6	1601,19
400,1	50,01	2,610	2,606	2,645	100	512,3	1044,8	100	988,4	0,0244	80,8	1424,51
400,2	50,01	2,442	2,438	2,473	100	479,0	977,6	100	989,3	0,0244	81,2	1334,8
400,1	49,99	1,972	1,970	2,004	100	374,5	789,3	100	991,4	0,0245	81,6	1062,58
400,0	49,99	1,746	1,746	1,765	100	316,0	698,6	100	992,8	0,0245	81,6	927,41
400,2	49,98	3,045	3,043	3,095	50	511,2	1213,0	50	993,9	0,0245	81,3	789,0
399,9	50,00	2,254	2,272	2,289	50	258,2	880,6	50	996	0,0244	80,4	516,88
400,1	50,00	1,931	1,920	1,952	50	137,7	718,7	50	997,1	0,0243	79,6	386,52
400,1	49,99	1,674	1,683	1,709	50	25,2	590,1	50	997,8	0,0243	78,8	273,35
400,1	50,0	3,635	3,750	3,647	20	-648,5	778,3	20	999,8	0,0241	77,1	7,72
400,3	50,0	3,617	3,766	3,654	20	-664,8	760,4	20	1000,0	0,0238	73,5	0,00
slope A= 0,00104                      intercept B= 461,34                      relative coefficient r= 0,966												
LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pz W	N.m	EFF %	P.F	
150,0	165000	295,51	175074,1	3270,4	1,442	2457,6	2641,4	10070,5	1594,4	94,25	0,855	
125,0	137500	243,83	144859,1	2226,7	1,131	1597,9	1827,2	7352,9	1326,1	94,92	0,858	
100,0	110000	196,47	115272,8	1445,7	0,865	973,5	1148,4	5268,7	1051,3	95,43	0,847	
75,0	82500	153,06	86223,7	877,4	0,595	500,2	645,0	3723,8	787,9	95,68	0,813	
50,0	55000	114,63	57718,9	492,1	0,424	236,7	284,1	2714,1	522,9	95,29	0,727	
25,0	27500	83,24	29584,6	259,5	0,201	56,4	70,8	2087,8	261,1	92,95	0,513	

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Type	K315L-6		Poles	6		output Power	110,0	IE:3	KW
Voltage	400	V	Current	196,5	A	Frequency	50,0		HZ
Speed	991	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	1302	Kg		IP55		

### LOAD CURVE

