

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

							IE:3	
Type	K315L-4		Poles	4		Power	160,0	kW
Voltage	400	V	Current	269,6	A	Frequency	50	Hz
Speed	1485	r/min	Duty	S1		Connection	Δ	
Ins.class	F		Weight	1269	kg	IP55		
MAJOR CONTENTS				TEST VALUE				
95,0 °C PHASE RESISTANCE OF WINDING			Ω	0,0248				
NO LOAD CURRENT			A	72,533				
NO LOAD INPUT			W	2539,40				
CORE LOSS(Pfe)			W	1040,12				
WINDAGE FRICTION LOSS(Pfw)			W	1381,35				
STATOR WINDING LOSS(Pcu1)			W	1771,66				
ROTOR WINDING LOSS(Pcu2)			W	1634,30				
STRAY LOAD LOSS(Ps)			W	1465,70				
LOCKED ROTOR CURRENT			A	1868,037				
LOCKED ROTOR INPUT @ FULL LOAD			W	429559				
LOCKED ROTOR TORQUE			N.m	2314,7				
PULL OUT TORQUE			N.m	3043,2				
LOCKED ROTOR CURRENT/RATED CURRENT			P.U	6,93				
LOCKED ROTOR TORQUE/RATED TORQUE			P.U	2,25				
PULL OUT TORQUE/RATED TORQUE			P.U	2,96				
FULL LOAD TORQUE			N.m	1029,4				
FULL LOAD CURRENT			A	269,6				
FULL LOAD SLIP			%	0,994				
INPUT @ FULL LOAD			kW	167,299				
FULL LOAD SPEED			r/min	1485,1				
EFFICIENCY @ FULL LOAD			%	95,64				
EFFICIENCY @ 75% LOAD			%	95,90				
POWER FACTOR @ FULL LOAD			0,896					
STATOR WINDING TEMPERATURE RISE			K	62				
D.E. BEARINGS TEMPERATURE BY PT100			°C	54,5				
STATOR WINDING TEMPERATURE			°C	71,8				
High voltage test			V	1800	Imin			
Insulation resistance			MΩ	500				
NOISE (LW)			dB(A)	87				
VIBRATION			mm/s	0,8				

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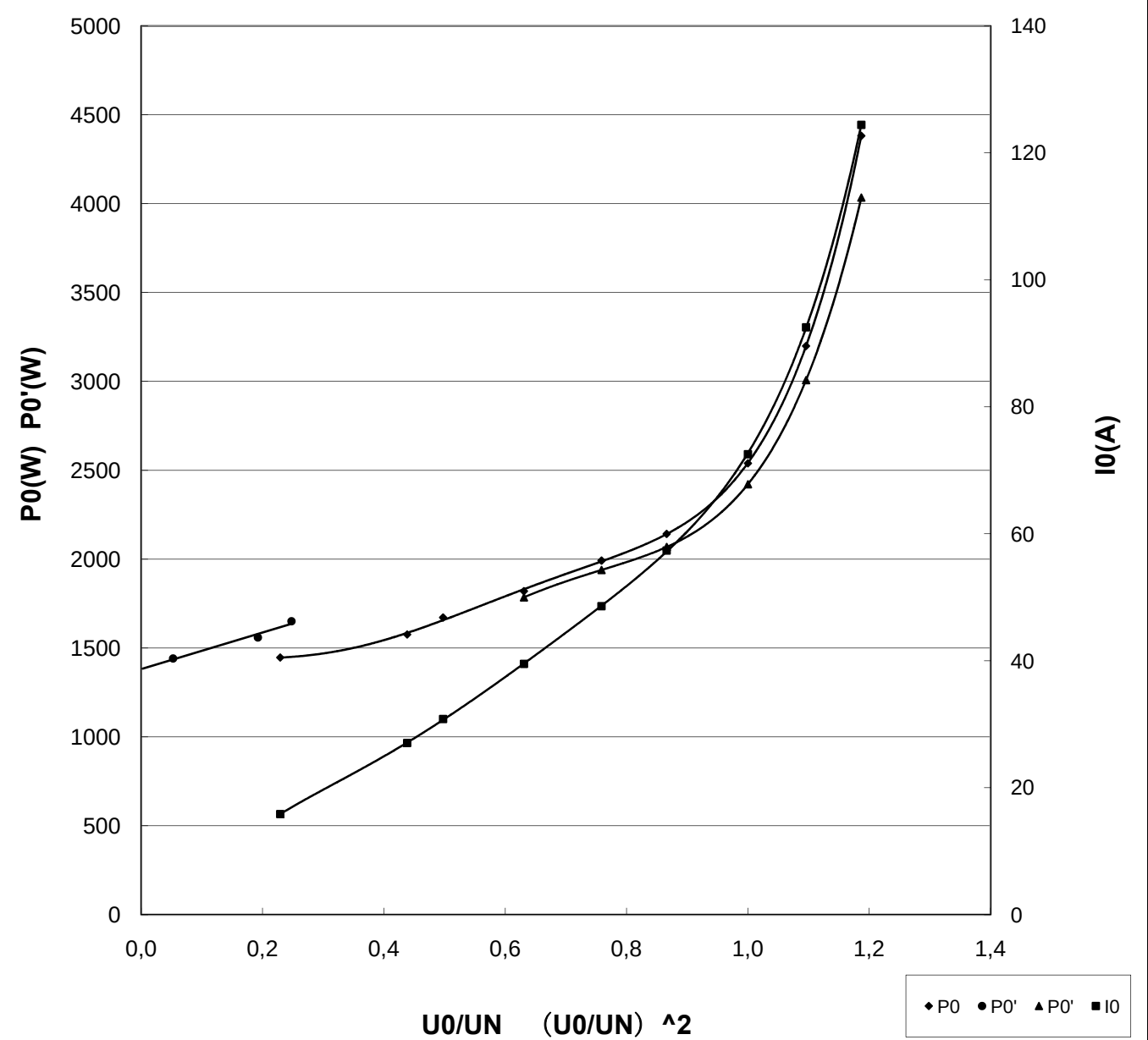
											IE:3
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Voltage	400	V	Current		269,6	A	Frequency		50	Hz	
Speed	1485	r/min	Duty		S1		Connection		△		
Ins.class	F		Weight		1269	kg	IP55				
NO LOAD TEST											
VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
474,7	1	50	2,483	2,469	2,512	50	-535,3	622,94	50	63,4	0,01497
438,3	1	50	1,845	1,839	1,867	50	-365,9	429,89	50	63,1	0,01496
400,0	1	50	1,446	1,442	1,464	50	-259,1	309,89	50	62,8	0,01494
346,4	1	50	2,810	2,929	2,866	20	-444,7	551,81	20	62,4	0,01492
303,5	1	50	2,365	2,489	2,434	20	-315,9	415,5	20	62,1	0,01491
252,3	1	50	1,928	2,022	1,975	20	-202,8	293,8	20	61,6	0,01488
199,1	1	50	1,488	1,595	1,539	20	-111,1	194,7	20	61,2	0,01486
175,4	1	50	2,669	2,654	2,788	10	-138,6	296,2	10	60,7	0,01484
91,7	1	50	1,584	1,532	1,636	10	19	125,7	10	59,9	0,01480
data calculation of no load											
V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'					
118,7%	1,19	124,418	4382,2	1,409	347,69	4034,51					
109,6%	1,10	92,513	3199,4	1,201	192,04	3007,36					
100,0%	1,00	72,533	2539,4	1,000	117,93	2421,47					
86,6%	0,87	57,367	2142,2	0,750	73,67	2068,49					
75,9%	0,76	48,586	1992,0	0,576	52,79	1939,21					
63,1%	0,63	39,499	1820,0	0,398	34,83	1785,17					
49,8%	0,50	30,817	1671,8	0,248	21,17	1650,59					
43,8%	0,44	27,036	1576,0	0,192	16,27	1559,73					
22,9%	0,23	15,841	1446,6	0,053	5,57	1441,07					
RESULTS AT: 400 V											
N.L.AMP	72,53	N.L.LOSS(W)	2539,40	Pw(W)	1381,4	Pe(W)	1040,1				

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Voltage	400	V	Current	269,6	A	Frequency	50,0	Hz
Speed	1485	r/min	Duty	S1		Connection	Δ	
Ins.class	F		Weight	1269	kg	IP55		

No Load Curve



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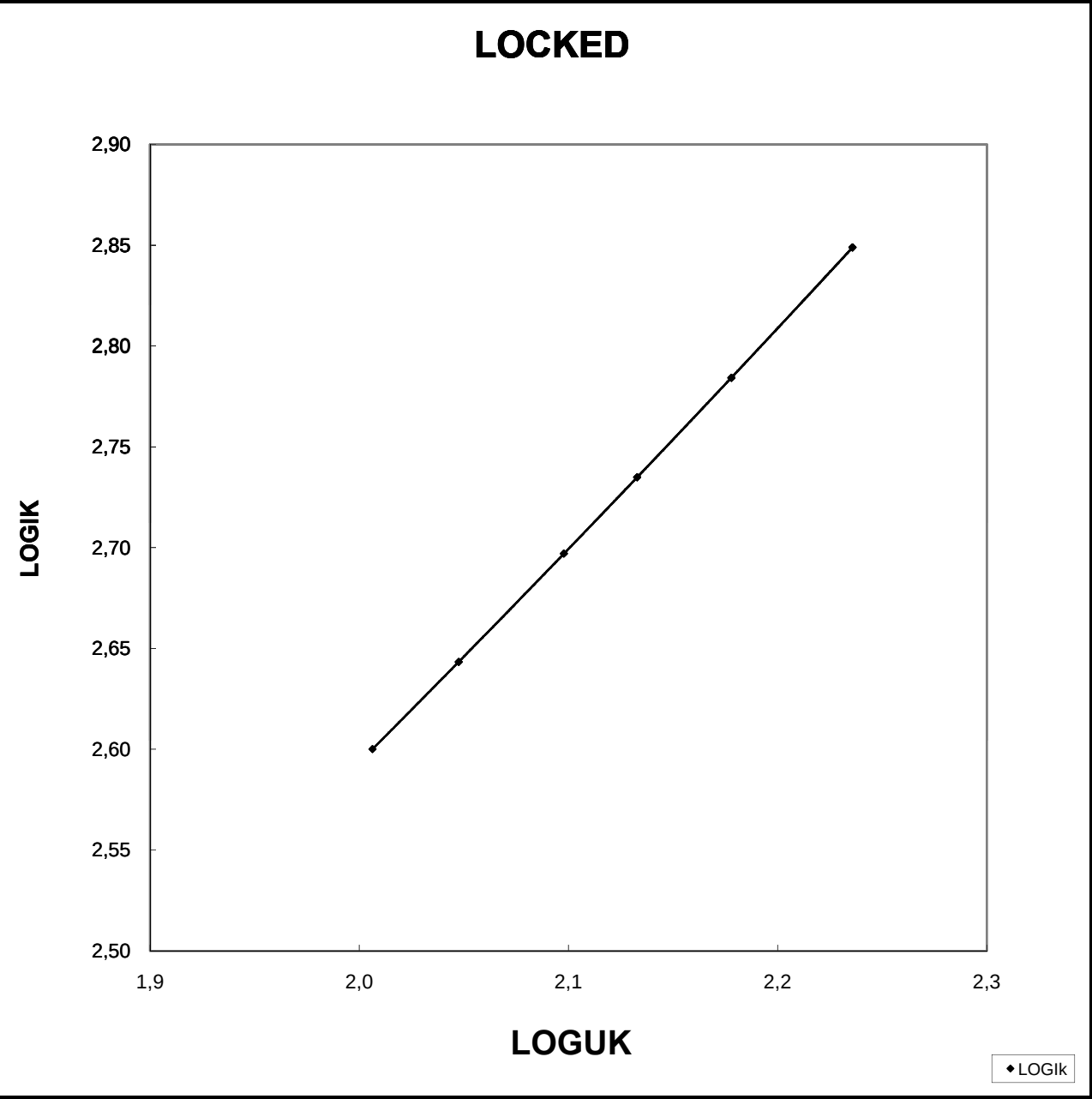
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Type	K315L-4		Poles	4		Power	160,0		IE:3
Voltage	400	V	Current	269,6	A	Frequency	50,0		kW
Speed	1485	r/min	Duty	S1		Connection	Δ		Hz
Ins.class	F		Weight	1269	kg	IP55			
LOCKED ROTOR TEST									
VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqur (kg.m)
172,1	1,0	3,502	3,515	3,575	200,0	-129,2	467,7	200,0	33,8
150,6	1,0	3,020	3,027	3,079	200,0	-99,9	352,2	200,0	25,0
135,8	1,0	2,695	2,701	2,751	200,0	-81,4	282,8	200,0	19,9
125,3	1,0	2,470	2,477	2,520	200,0	-68,9	237,9	200,0	16,5
111,6	1,0	2,183	2,191	2,224	200,0	-54,7	186,9	200,0	12,9
101,5	1,0	1,977	1,982	2,013	200,0	-45,6	153,9	200,0	10,6
data calculation of locked rotor									
Uk	IK		PK	TK		LOGUk	LOGIk	LOGPk	LOGTk
V	A		kW	N.m					
172,11	706,13		67,700	330,75		2,2358	2,8489	1,8306	2,5195
150,63	608,43		50,460	245,00		2,1779	2,7842	1,7029	2,3892
135,79	543,13		40,280	194,53		2,1329	2,7349	1,6051	2,2890
125,26	497,78		33,800	161,70		2,0978	2,6970	1,5289	2,2087
111,58	439,85		26,440	126,42		2,0476	2,6433	1,4223	2,1018
101,47	398,17		21,660	103,88		2,0064	2,6001	1,3357	2,0165
performance collection of locked rotor									
at rated volts		at rated current		at 2.5 times rated current		at 100V			
VOLTS (V)		400		71,114		165,6		100,0	
AMPS (A)		1868,0		270,0		675,0		390,75	
INPUT (kW)		429,56				62,0		20,884	
TORQUE (N.m)		2314,71							

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ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K315L-4		Poles	4		Power	160,0	IE:3
Voltage	400	V	Current	269,6	A	Frequency	50,0	kW
Speed	1485	r/min	Duty	S1		Connection	Δ	Hz
Ins.class		F	Weight	1269	kg		IP55	



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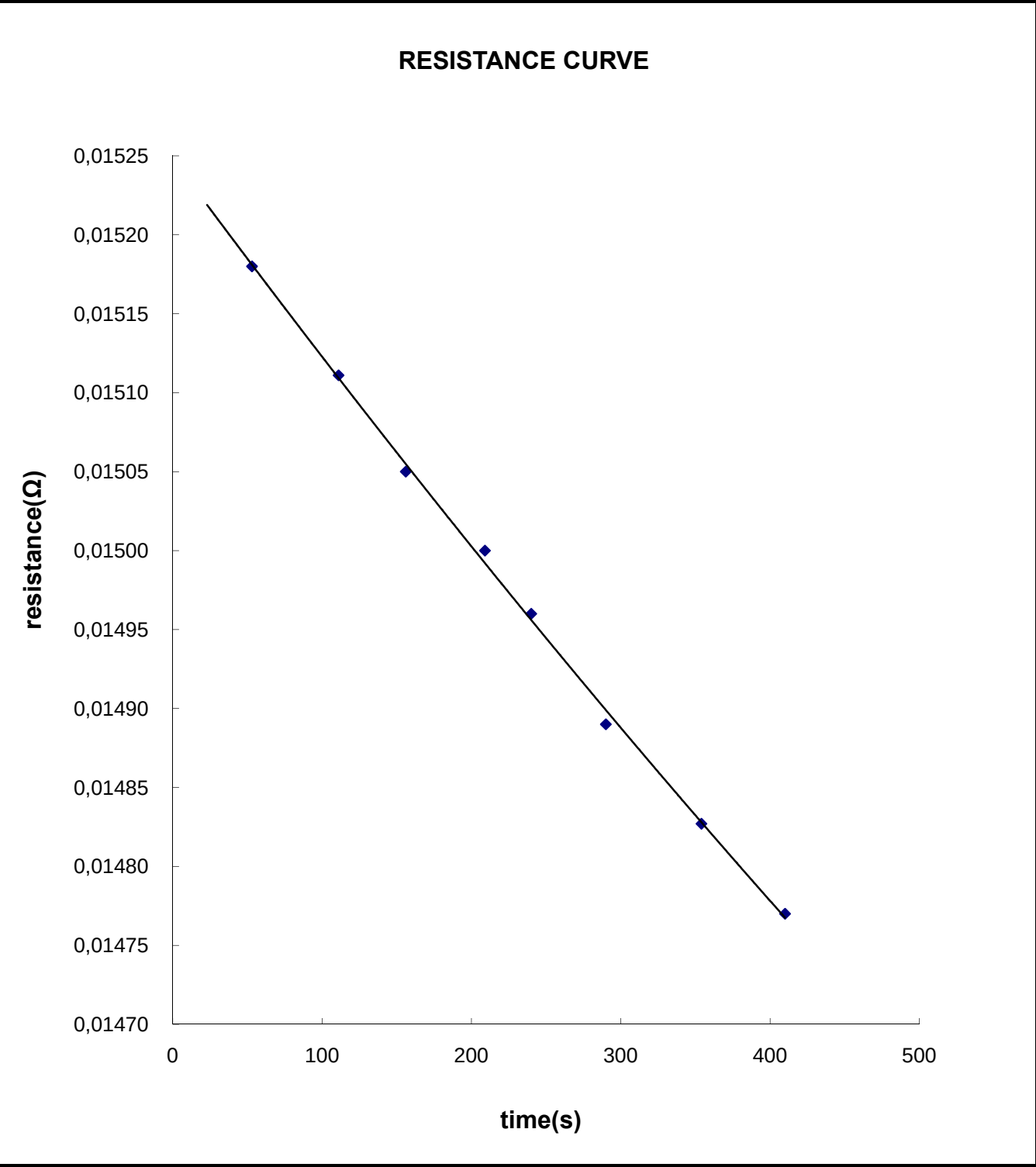
ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K315L-4					Poles			4		Power			160		kW		IE:3						
Voltage	400		V			Current			269,6		A		Frequency			50		Hz						
Speed	1485		r/min			Duty			S1		Connection			Δ										
Ins.class	F					Weight			1269		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			
10,58	400,1	2,681	2,687	2,730	100	595,9	1093	100	46,7	—	64,0	62,5	—	—	—	—	—	—	—	—	4,4			
11,28	400,1	2,677	2,682	2,725	100	596,9	1091	100	48,8	—	65,4	64,1	—	—	—	—	—	—	—	—	4,7			
12,01	400,2	2,675	2,676	2,720	100	597,7	1089	100	51,6	—	68,5	67,2	—	—	—	—	—	—	—	—	4,9			
12,29	400,3	2,681	2,682	2,728	100	599,7	1091	100	52,8	—	69,9	68,6	—	—	—	—	—	—	—	—	5,0			
13,00	400,2	2,676	2,682	2,726	100	598,4	1092	100	53,5	—	70,8	69,6	—	—	—	—	—	—	—	—	4,7			
13,30	400,3	2,694	2,699	2,741	100	602,9	1098	100	54,2	—	71,3	70,1	—	—	—	—	—	—	—	—	4,8			
14,00	400,2	2,680	2,684	2,726	100	598,9	1092	100	54,5	—	71,8	70,6	—	—	—	—	—	—	—	—	4,9			
The average of the last three		270,100				A		169407		W		54,5	—	71,3	70,6	—	—	—	—	—	—	4,8		
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)	53	111	156	209	240	290	354	410																
RESISTANC	0,01518	0,01511	0,01505	0,01500	0,01496	0,01489	0,01483	0,01477																
WINDING RESISTANCE(COLD)																								
Δ	U1-V1			U1-W1			V1-W1			AVERAGE			MIN			AMBIENT TEM.								
	0,01203			0,01202			0,01208			0,01204			0,01202			5 °C								
Y	U1-U2			V1-V2			W1-W2			AVERAGE			MIN			AMBIENT TEM.								
																°C								
resistance value at 0 sec (Ω)					0,015248					calculation value of temp.rising					64,65			K						
90 S (Ω)					0,015135					calculation value of temp.rising					62,39			K						
full load curent					268,63 A					modify value of temp. rising					61,71			K						

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Speed	1485	r/min	Duty	S1		Connection	Δ		
Ins.class		F	Weight	1269	kg		IP55		



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Voltage	400	V	Current		269,6	A	Frequency		50,0		Hz	
Speed	1485	r/min	Duty		S1		Connection		Δ			
Ins.class	F		Weight		1269	kg			IP55			
LOAD TEST												
V	HZ	I1	I2	I3	mul.	W1	W2	mul.	r/min	Resistance Ω	Temperature °C	Torque N.m
399,9	50,02	4,176	4,181	4,256	100	900,0	1685,1	100	1477,2	0,0154	72,5	1573
399,8	50,02	3,376	3,382	3,440	100	748,6	1361,3	100	1482,2	0,0155	74,4	1291
400,2	50,01	2,950	2,954	3,005	100	657,2	1190,5	100	1484,8	0,0156	75,1	1130
399,9	50,01	2,690	2,694	2,738	100	594,7	1085,9	100	1486,1	0,0156	75,3	1026
399,9	50,00	2,080	2,081	2,115	100	437,0	839,4	100	1490	0,0155	74,7	777,3
399,9	50,00	1,487	1,487	1,511	100	257,9	597,0	100	1493,5	0,0155	73,7	515,8
400,0	49,99	1,981	1,986	2,006	50	134,8	744,2	50	1496,5	0,0154	71,9	255,9
400,2	50,0	1,457	1,458	1,475	50,0	-245,5	325,2	50	1499,5	0,0153	69,1	7,97
400,1	50,0	1,449	1,449	1,466	50,0	-259,0	309,8	50	1500,0	0,0150	63,9	0,00
slope A= 0,00140												

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Speed	1485	r/min	Duty	S1		Connection	Δ		
Ins.class		F	Weight	1269	kg		IP55		

