

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

			IE:3			
Type	K250M-2		Poles	2	Power	55,0 kW
Voltage	400	V	Current	94,1 A	Frequency	50 Hz
Speed	2972	r/min	Duty	S1	Connection	△
Ins.class	F		Weight	483 kg	IP55	
MAJOR CONTENTS				TEST VALUE		
95,0 °C	PHASE RESISTANCE OF WINDING		Ω	0,0865		
NO LOAD CURRENT			A	25,848		
NO LOAD INPUT			W	1433,05		
CORE LOSS(Pfe)			W	495,52		
WINDAGE FRICTION LOSS(Pfw)			W	888,14		
STATOR WINDING LOSS(Pcu1)			W	705,68		
ROTOR WINDING LOSS(Pcu2)			W	525,31		
STRAY LOAD LOSS(Ps)			W	608,55		
LOCKED ROTOR CURRENT			A	754,579		
LOCKED ROTOR INPUT @ FULL LOAD			W	193143		
LOCKED ROTOR TORQUE			N.m	434,8		
PULL OUT TORQUE			N.m	565,6		
LOCKED ROTOR CURRENT/RATED CURRENT			P.U	8,02		
LOCKED ROTOR TORQUE/RATED TORQUE			P.U	2,46		
PULL OUT TORQUE/RATED TORQUE			P.U	3,20		
FULL LOAD TORQUE			N.m	176,8		
FULL LOAD CURRENT			A	94,1		
FULL LOAD SLIP			%	0,921		
INPUT @ FULL LOAD			kW	58,225		
FULL LOAD SPEED			r/min	2972,4		
EFFICIENCY @ FULL LOAD			%	94,46		
EFFICIENCY @ 75% LOAD			%	94,46		
POWER FACTOR @ FULL LOAD				0,893		
STATOR WINDING TEMPERATURE RISE			K	41		
D.E. BEARINGS TEMPERATURE BY PT100			°C	30,4		
STATOR WINDING TEMPERATURE			°C	59,2		
High voltage test			V	1800	Imin	
Insulation resistance			MΩ	500		
NOISE (LW)			dB(A)	87		
VIBRATION			mm/s	0,9		

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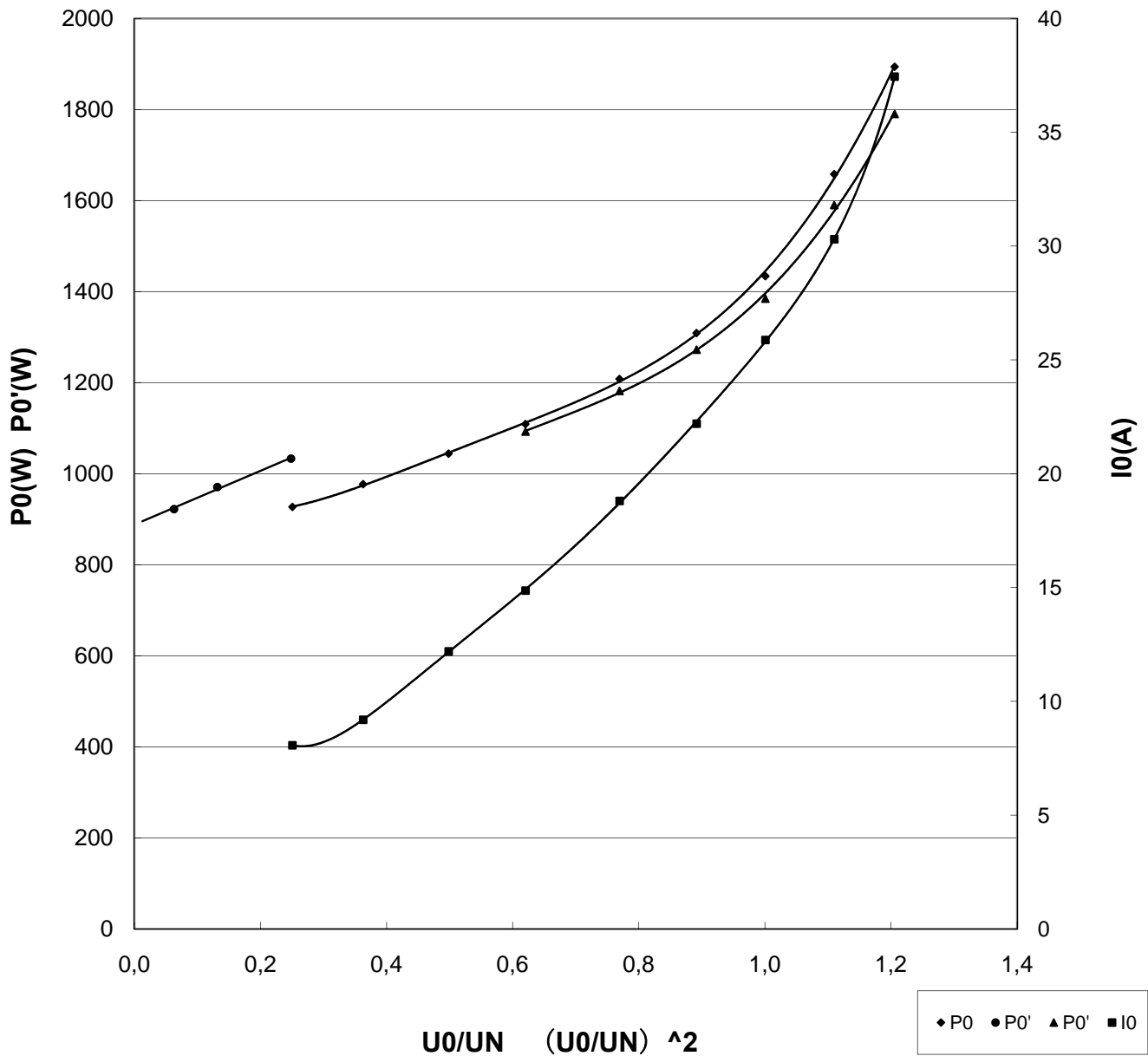
Type	K250M-2		Poles	2		Power	55,0 kW		IE:3		
Voltage	400	V	Current	94,1	A	Frequency	50 Hz				
Speed	2972	r/min	Duty	S1		Connection	Δ				
Ins.class	F		Weight	483	kg			IP55			
NO LOAD TEST											
VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
482,3	1	50	1,831	1,912	1,874	20	-382,8	477,5	20	47,7	0,04939
444,0	1	50	1,483	1,552	1,510	20	-281,5	364,4	20	47,5	0,04935
400,3	1	50	2,591	2,550	2,622	10	-407,3	550,7	10	47,1	0,04928
356,6	1	50	2,225	2,189	2,245	10	-301,2	432,1	10	46,9	0,04925
307,8	1	50	1,886	1,855	1,900	10	-207,3	328,1	10	46,7	0,04921
248,1	1	50	2,960	2,957	3,003	5	-228,2	450,0	5	46,4	0,04916
199,4	1	50	2,426	2,429	2,464	5	-115,4	324,2	5	46,1	0,04911
145,2	1	50	1,828	1,829	1,857	5	-13,9	209,3	5	45,9	0,04907
100,3	1	50	1,603	1,611	1,626	5	38	147,4	5	45,7	0,04904
data calculation of no load											
V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'					
120,6%	1,21	37,447	1894,0	1,454	103,88	1790,12					
111,0%	1,11	30,300	1658,0	1,232	67,96	1590,04					
100,1%	1,00	25,877	1434,0	1,002	49,50	1384,50					
89,2%	0,89	22,197	1309,0	0,795	36,39	1272,61					
76,9%	0,77	18,803	1208,0	0,592	26,10	1181,90					
62,0%	0,62	14,867	1109,0	0,385	16,30	1092,70					
49,8%	0,50	12,198	1044,0	0,248	10,96	1033,04					
36,3%	0,36	9,190	977,0	0,132	6,22	970,78					
25,1%	0,25	8,067	927,0	0,063	4,79	922,21					
RESULTS AT: 400 V											
N.L.AMP	25,85	N.L.LOSS(W)	1433,05	Pw(W)	888,1	Pe(W)	495,5				

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Voltage	400	V	Current	94,1	A	Frequency	50,0 Hz		
Speed	2972	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	483	kg		IP55		

No Load Curve



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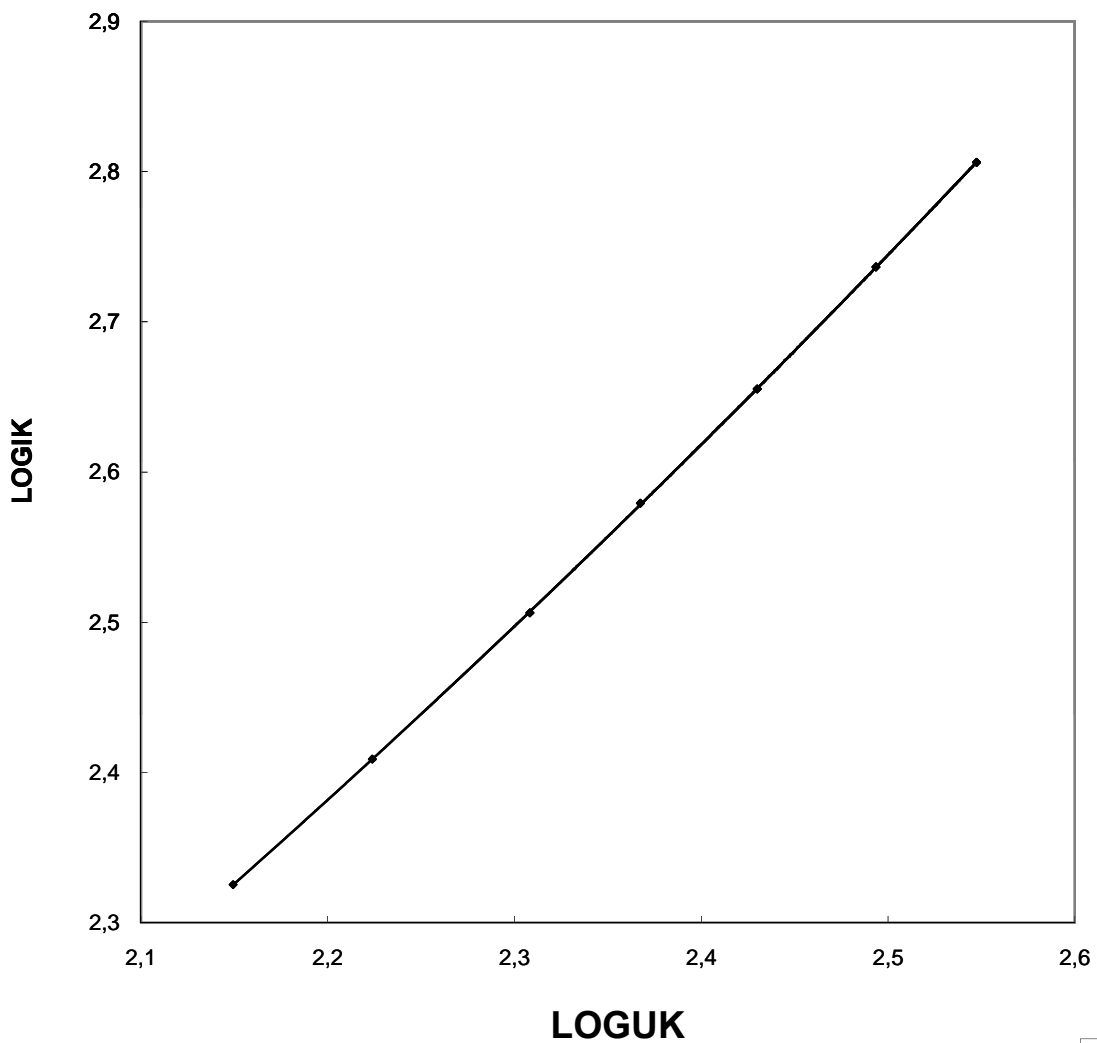
Type	K250M-2		Poles	2		Power	55,0		IE:3	kW
Voltage	400	V	Current	94,1	A	Frequency	50,0		Hz	
Speed	2972	r/min	Duty	S1		Connection	Δ			
Ins.class	F		Weight	483	kg		IP55			
LOCKED ROTOR TEST										
VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu (kg.m)	
352,7	1,0	3,186	3,177	3,235	200,0	-162,2	880,8	200,0	31,9	
311,6	1,0	2,718	2,706	2,753	200,0	-124,6	660,8	200,0	24,1	
269,2	1,0	2,257	2,243	2,282	200,0	-92,2	472,5	200,0	17,6	
233,1	1,0	1,896	1,881	1,916	200,0	-69,0	342,0	200,0	12,9	
203,4	1,0	3,205	3,181	3,240	100,0	-106,0	500,6	100,0	9,6	
167,5	1,0	2,561	2,544	2,588	100,0	-72,5	327,8	100,0	6,2	
141,1	1,0	2,114	2,101	2,132	100,0	-52,0	227,4	100,0	4,3	
data calculation of locked rotor										
Uk	IK	PK	TK			LOGUk	LOGIk	LOGPk	LOGTk	
V	A	kW	N.m							
352,74	639,86	143,720	312,62			2,5475	2,8061	2,1575	2,4950	
311,58	545,11	107,240	236,18			2,4936	2,7365	2,0304	2,3732	
269,16	452,14	76,060	172,48			2,4300	2,6553	1,8812	2,2367	
233,05	379,56	54,600	126,42			2,3675	2,5793	1,7372	2,1018	
203,37	320,85	39,460	94,08			2,3083	2,5063	1,5962	1,9735	
167,47	256,44	25,530	60,76			2,2239	2,4090	1,4071	1,7836	
141,05	211,57	17,540	42,14			2,1494	2,3254	1,2440	1,6247	
performance collection of locked rotor										
at rated volts		at rated current		at 2.5 times rated current		at 100V				
VOLTS (V)		400		69,884		152,4		100,0		
AMPS (A)		754,6		93,3		233,3		142,33		
INPUT (kW)		193,14				21,1		8,167		
TORQUE (N.m)		434,77								

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Type	K250M-2	Poles	2	Power	55,0	IE:3
Voltage	400 V	Current	94,1 A	Frequency	50,0	kW
Speed	2972 r/min	Duty	S1	Connection	Δ	Hz
Ins.class	F	Weight	483 kg		IP55	

LOCKED



◆ LOGIK

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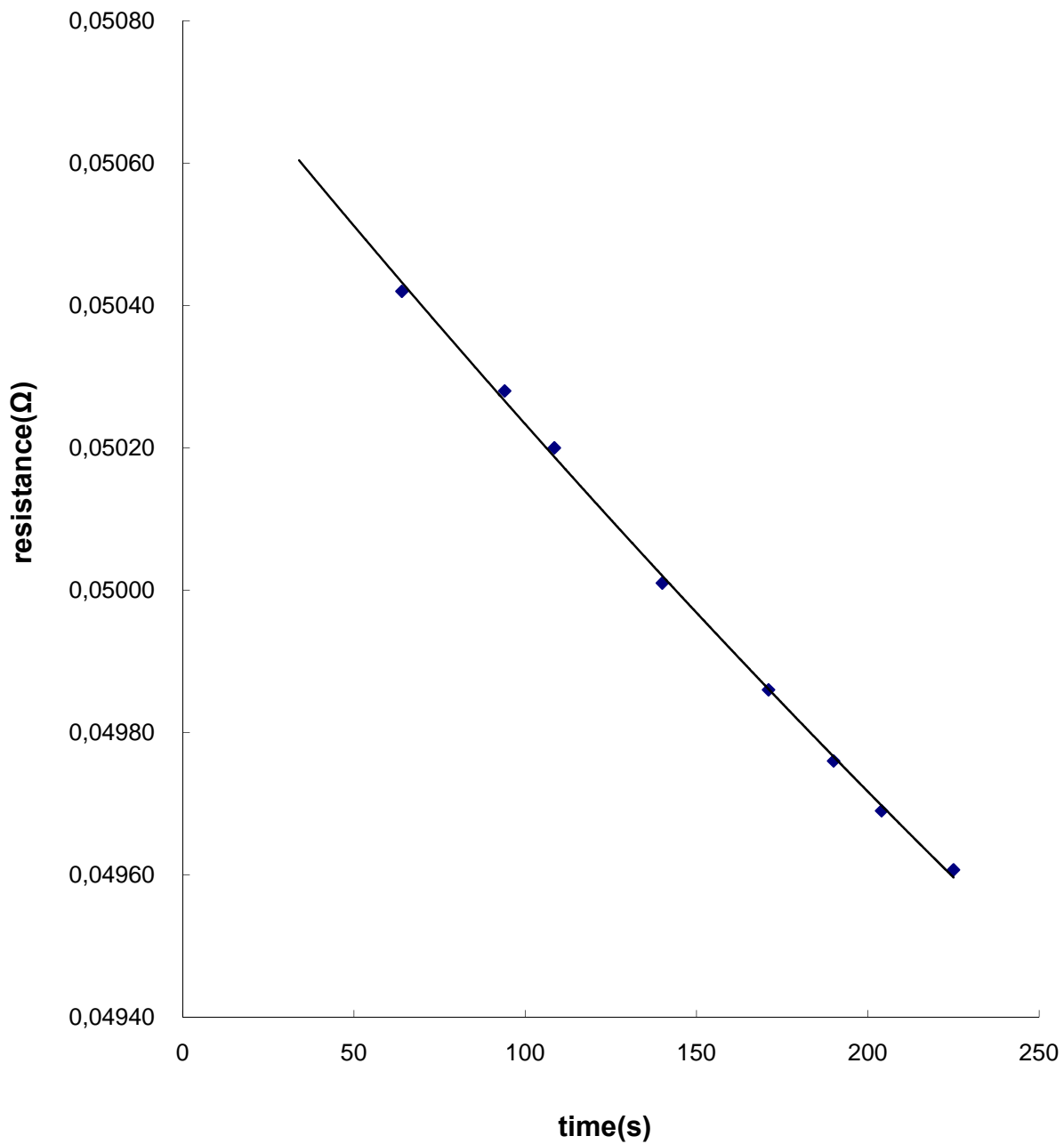
Type	IE3-250M-2					Poles	2					Power	55 kW									
Voltage	400	V					Current	94,1	A					Frequency	50 Hz							
Speed	2972	r/min					Duty	S1					Connection	Δ								
Ins.class	F					Weight	483	kg					IP55									
TEMPERATURE RISE TEST																						
TIME (h:min)	V	I1	I2	I3	mul.	W1	W2	mul.	T1 °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	
15,30	400,3	1,925	1,922	1,931	50	431,6	771,1	50	32,5	—	57,8	56,8	—	—	—	—	—	—	—	—	—	12,2
16,01	400,1	1,891	1,888	1,897	50	426,9	757,3	50	32,7	—	58,9	57,6	—	—	—	—	—	—	—	—	—	11,7
16,30	400,3	1,887	1,885	1,894	50	423,3	757,5	50	31,5	—	59,1	57,8	—	—	—	—	—	—	—	—	—	11,6
17,04	400,3	1,891	1,888	1,897	50	420,6	753,6	50	30,4	—	59,2	57,9	—	—	—	—	—	—	—	—	—	11,6
The average of the last three		94,542			A	58986,7		W	30,4	—	59,1	57,9	—	—	—	—	—	—	—	—	—	11,6
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)	64	94	108,5	140	171	190	204	225														
RESISTANC	0,05042	0,05028	0,05020	0,05001	0,04986	0,04976	0,04969	0,04961														
WINDING RESISTANCE(COLD)																						
Δ	U1-V1		U1-W1		V1-W1		AVERAGE		MIN		AMBIENT TEM.											
	0,04246		0,04244		0,0424		0,04243		0,04240		7,9 °C											
Y	U1-U2		V1-V2		W1-W2		AVERAGE		MIN		AMBIENT TEM.											
											°C											
resistance value at 0 sec (Ω)				0,050804				calculation value of temp.rising				44,41 K										
90 S (Ω)				0,050294				calculation value of temp.rising				41,49 K										
full load curent				94,12 A				modify value of temp. rising				41,12 K										

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Voltage	400	V	Current	94,1	A	Frequency	50,0	Hz
Speed	2972	r/min	Duty	S1		Connection	Δ	
Ins.class	F		Weight	483	kg		IP55	

RESISTANCE CURVE



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Voltage	400	V	Current	94,1	A	Frequency	50,0		kW			
Speed	2972	r/min	Duty	S1		Connection	Δ		Hz			
Ins.class	F		Weight	483	kg	IP55						
LOAD TEST												
V	HZ	I1	I2	I3	mul.	W1	W2	mul.	r/min	Resistance Ω	Temperature °C	Torqu N.m
400,2	50,02	2,851	2,853	2,869	50	634,6	1136,3	50	2958	0,0514	59,3	266,32
400,1	50,03	2,073	2,072	2,083	50	465,4	825,1	50	2971,6	0,0517	61,1	194,48
400,4	50,02	1,887	1,886	1,896	50	420,6	748,6	50	2974,5	0,0517	61,1	176,28
400,4	50,02	1,462	1,458	1,466	50	308,8	582,3	50	2981,5	0,0517	60,8	133,17
400,3	50,02	1,280	1,276	1,282	50	258,4	508,8	50	2984,8	0,0516	60,2	114,07
400,0	50,02	2,602	2,659	2,618	20	451,4	1057,6	20	2988,5	0,0513	58,6	89,01
400,41	50,01	2,193	2,252	2,206	20	307,0	888,6	20	2991,2	0,0512	57,8	69,75
400,3	50,02	1,713	1,769	1,724	20	126,8	669,3	20	2995,1	0,0510	57,1	44,52
400,2	50,0	2,612	2,578	2,656	10,0	-312,8	636,0	10	2999,9	0,0506	54,6	4,43
400,2	50,0	2,596	2,563	2,640	10,0	-407,0	551,7	10	3000,0	0,0495	48,3	0,00
slope A= 0,01947		intercept B= 47,67			relative coefficient r= 0,987							
LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pz W	N.m	EFF %	P.F	
150,0	82500	142,29	88174,5	1613,0	1,499	1290,6	1382,3	5669,5	266,5	93,56	0,894	
125,0	68750	117,82	73136,5	1105,9	1,211	866,6	955,0	4311,1	221,5	94,00	0,896	
100,0	55000	94,12	58224,9	705,7	0,921	525,3	608,5	3223,2	176,8	94,46	0,893	
75,0	41250	71,80	43669,8	410,7	0,667	285,3	337,6	2417,3	131,7	94,46	0,878	
50,0	27500	51,46	29369,9	211,0	0,429	123,0	150,0	1867,7	87,8	93,63	0,824	
25,0	13750	33,94	15290,5	91,8	0,205	30,2	37,3	1542,9	43,8	89,93	0,650	

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Voltage	400	V	Current	94,1	A	Frequency	50,0	Hz	
Speed	2972	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	483	kg		IP55		

LOAD CURVE

