

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

IE:3

Type	K100L-4	Poles	4	Power	3,0	kW
Voltage	400 V	Current	6,0 A	Frequency	50	Hz
Speed	1451 r/min	Duty	S1	Connection	△	
Ins.class	F	Weight	56 kg		IP55	

MAJOR CONTENTS		TEST VALUE	
95,0 °C PHASE RESISTANCE OF WINDING	Ω	2,5002	
NO LOAD CURRENT	A	2,693	
NO LOAD INPUT	W	180,21	
CORE LOSS(Pfe)	W	131,42	
WINDAGE FRICTION LOSS(Pfw)	W	32,30	
STATOR WINDING LOSS(Pcu1)	W	88,45	
ROTOR WINDING LOSS(Pcu2)	W	103,12	
STRAY LOAD LOSS(Ps)	W	46,23	
LOCKED ROTOR CURRENT	A	40,022	
LOCKED ROTOR INPUT @ FULL LOAD	W	18287	
LOCKED ROTOR TORQUE	N.m	49,9	
PULL OUT TORQUE	N.m	67,0	
LOCKED ROTOR CURRENT/RATED CURRENT	P.U	6,63	
LOCKED ROTOR TORQUE/RATED TORQUE	P.U	2,50	
PULL OUT TORQUE/RATED TORQUE	P.U	3,37	
FULL LOAD TORQUE	N.m	19,7	
FULL LOAD CURRENT	A	6,0	
FULL LOAD SLIP	%	3,239	
INPUT @ FULL LOAD	kW	3,403	
FULL LOAD SPEED	r/min	1451,4	
EFFICIENCY @ FULL LOAD	%	88,14	
EFFICIENCY @ 75% LOAD	%	88,03	
POWER FACTOR @ FULL LOAD		0,814	
STATOR WINDING TEMPERATURE RISE	K	59	
D.E. BEARINGS TEMPERATURE BY PT100	°C	47,7	
STATOR WINDING TEMPERATURE	°C	78,8	
High voltage test	V	1800	Imin
Insulation resistance	MΩ	500	
NOISE (LW)	dB(A)	62	
VIBRATION	mm/s	0,3	

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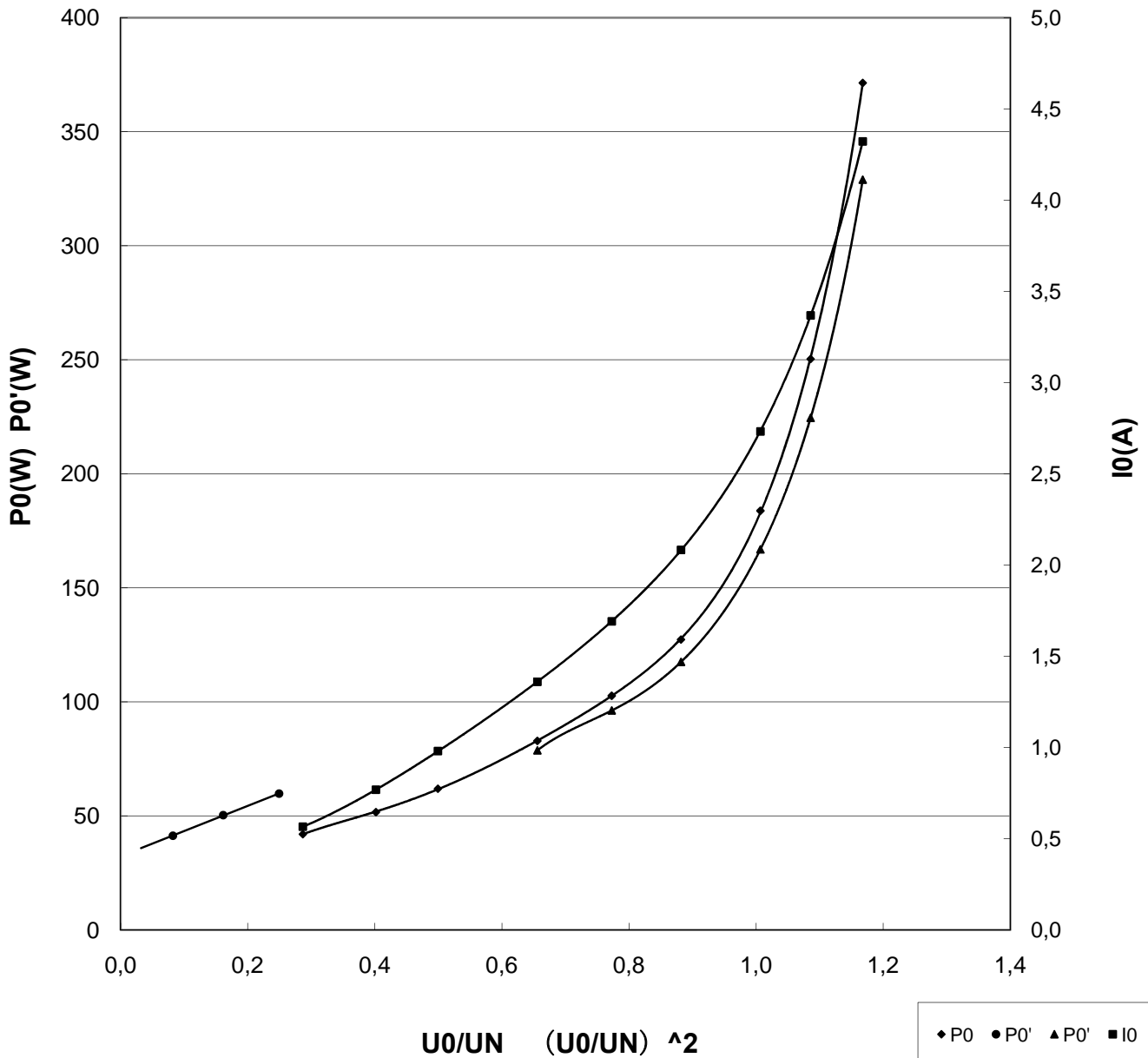
Type	K100L-4	Poles	4	Power	3,0 kW	IE:3					
Voltage	400 V	Current	6,0 A	Frequency	50 Hz						
Speed	1451 r/min	Duty	S1	Connection	△						
Ins.class	F	Weight	56 kg		IP55						
NO LOAD TEST											
VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
467,1	1	50	2,230	2,148	2,105	2	-485,2	670,91	2	65,0	1,5152
434,3	1	50	1,726	1,681	1,645	2	-356,1	481,28	2	65,0	1,5152
402,7	1	50	1,396	1,372	1,331	2	-270,3	362,21	2	65,0	1,5152
352,7	1	50	2,108	2,097	2,044	1	-351,1	478,44	1	64,3	1,5117
309,1	1	50	1,695	1,692	1,688	1	-235,6	338,3	1	64,2	1,5112
262,3	1	50	1,371	1,365	1,342	1	-156,7	239,6	1	64,1	1,5107
199,7	1	50	0,974	0,984	0,983	1	-74,1	136,0	1	63,9	1,5097
160,7	1	50	0,773	0,776	0,756	1	-42,6	94,3	1	63,8	1,5092
114,7	1	50	0,574	0,558	0,565	1	-11,7	53,7	1	63,6	1,5082
data calculation of no load											
V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'					
116,8%	1,17	4,322	371,4	1,364	42,45	328,97					
108,6%	1,09	3,368	250,4	1,179	25,79	224,57					
100,7%	1,01	2,732	183,8	1,014	16,97	166,85					
88,2%	0,88	2,083	127,3	0,777	9,84	117,50					
77,3%	0,77	1,691	102,7	0,597	6,49	96,21					
65,6%	0,66	1,360	82,9	0,430	4,19	78,72					
49,9%	0,50	0,980	61,9	0,249	2,18	59,75					
40,2%	0,40	0,768	51,7	0,161	1,34	50,34					
28,7%	0,29	0,566	42,0	0,082	0,72	41,28					
RESULTS AT: 400 V											
N.L.AMP	2,69	N.L.LOSS(W)	180,21	Pw(W)	32,3	Pe(W)	131,4				

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Voltage	400	V	Current	6,0	A	Frequency	50,0 Hz		
Speed	1451	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	56	kg				

No Load Curve



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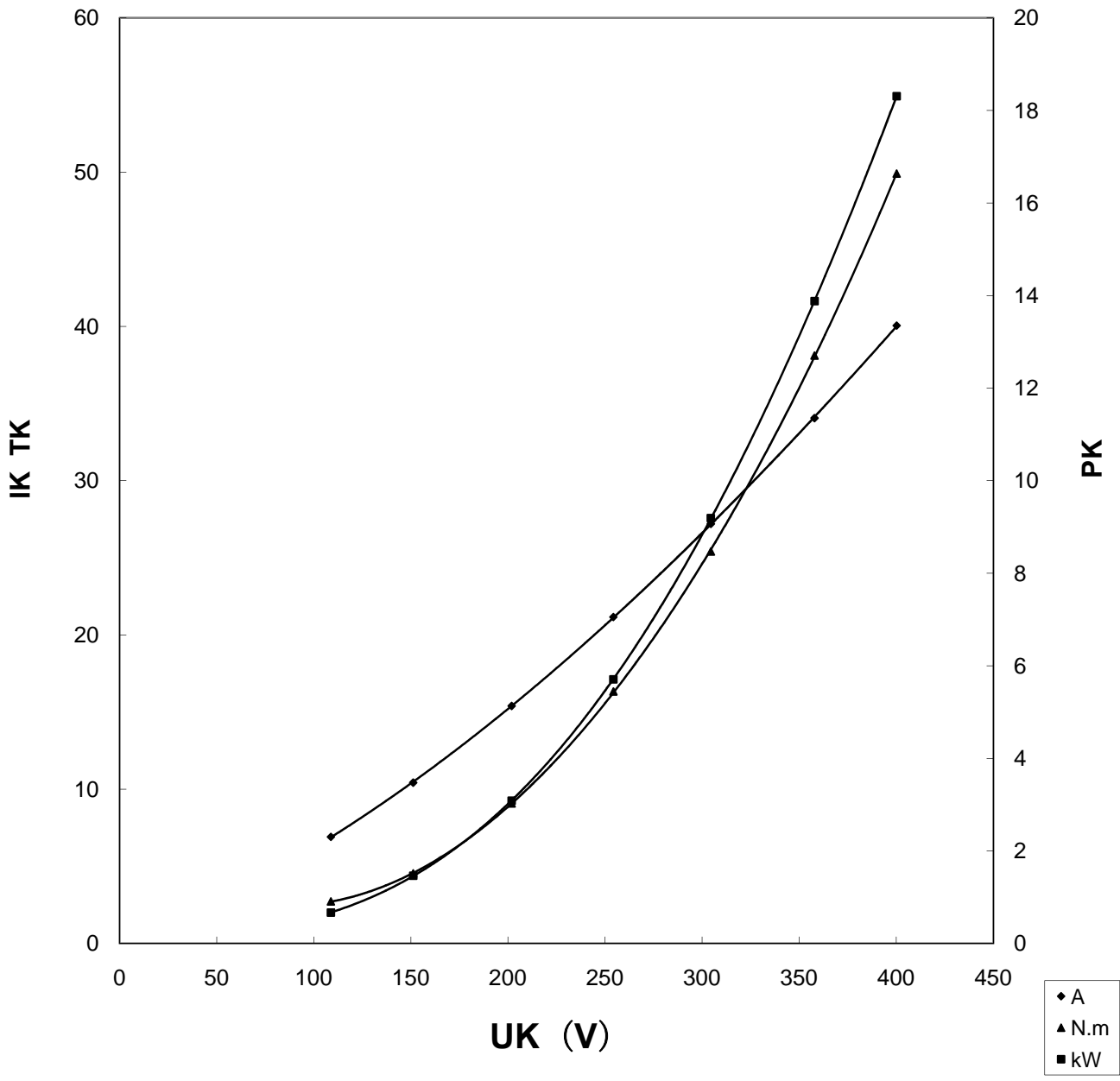
Type	K100L-4		Poles	4		Power	IE:3		3,0	kW
Voltage	400	V	Current	6,0	A	Frequency	50,0		Hz	
Speed	1451	r/min	Duty	S1		Connection	Δ			
Ins.class	F		Weight	56	kg	IP55				
LOCKED ROTOR TEST										
VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqur (Kg.m)	
400,2	1,0	1,999	1,997	2,011	20,0	69,4	846,0	20,0	5,09	
357,9	1,0	1,701	1,693	1,713	20,0	54,3	639,6	20,0	3,89	
304,5	1,0	1,363	1,347	1,370	20,0	29,7	429,9	20,0	2,59	
254,3	1,0	2,126	2,087	2,134	10,0	22,5	548,2	10,0	1,67	
201,9	1,0	1,554	1,511	1,553	10,0	0,0	308,6	10,0	0,93	
151,2	1,0	2,107	2,046	2,102	5,0	-13,8	306,3	5,0	0,46	
108,8	1,0	1,392	1,362	1,392	5,0	-11,0	144,5	5,0	0,28	
data calculation of locked rotor										
Uk	IK	PK	TK	LOGUk	LOGIk	LOGPk	LOGTk			
V	A	kW	N.m							
400,20	40,05	18,308	49,91	2,6023	1,6026	1,2626	1,6982			
357,90	34,05	13,878	38,11	2,5538	1,5321	1,1423	1,5811			
304,50	27,20	9,192	25,41	2,4836	1,4346	0,9634	1,4050			
254,30	21,16	5,707	16,33	2,4053	1,3255	0,7564	1,2131			
201,90	15,40	3,086	9,07	2,3051	1,1874	0,4894	0,9578			
151,20	10,43	1,463	4,54	2,1796	1,0181	0,1651	0,6568			
108,80	6,91	0,668	2,72	2,0366	0,8394	-0,1755	0,4349			
performance collection of locked rotor										
	at rated volts		at rated current		at 2.5 times rated current		at 100V			
VOLTS (V)	400		96,626		195,9		100,0			
AMPS (A)	40,0		5,9		14,8		5,98			
INPUT (kW)	18,29				2,8		0,326			
TORQUE (N.m)	49,85									

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Type	K100L-4	Poles	4	Power	3,0	IE:3
Voltage	400 V	Current	6,0 A	Frequency	50,0	kW
Speed	1451 r/min	Duty	S1	Connection	Δ	Hz
Ins.class	F	Weight	56 kg			

Locked Rotor Curve



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Type	K100L-4		Poles	4		Power	3	kW	IE:3	
Voltage	400	V	Current	6,0	A	Frequency	50	Hz		
Speed	1451	r/min	Duty	S1		Connection	Δ			
Ins.class	F		Weight	56	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	400,0	2,992	3,042	2,988	2	521,9	1288,8	2	44,5	—	74,1	77,9	—	—	—	—	—	—	48,5	22,8	17,5
14,02	400,1	2,997	3,030	2,984	2	520,8	1285,1	2	47,2	—	74,8	78,5	—	—	—	—	—	—	49,3	23,3	17,7
14,31	400,0	3,019	3,052	3,010	2	530,8	1292,9	2	46,2	—	75,2	78,9	—	—	—	—	—	—	49,2	23,2	17,5
15,01	400,6	3,006	3,037	3,002	2	522,5	1286,5	2	47,7	—	75,1	78,8	—	—	—	—	—	—	49,0	22,5	17,5
The average of the last three		6,030		A		3625,73		W	47,7	—	75,0	78,8	—	—	—	—	—	—	49,0	22,5	17,6

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)	30	60	80	118	146	201	255	337		
RESISTANC	1,57300	1,56100	1,55600	1,54800	1,54200	1,53500	1,52900	1,52300		

WINDING RESISTANCE(COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	1,277	1,274	1,275	1,27533	1,27400	17,5 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
						°C

resistance value at 0 sec (Ω)

1,580200

calculation value of temp.rising

60,62 K

30 S (Ω)

1,572526

calculation value of temp.rising

59,10 K

full load curent

6,04 A

modify value of temp. rising

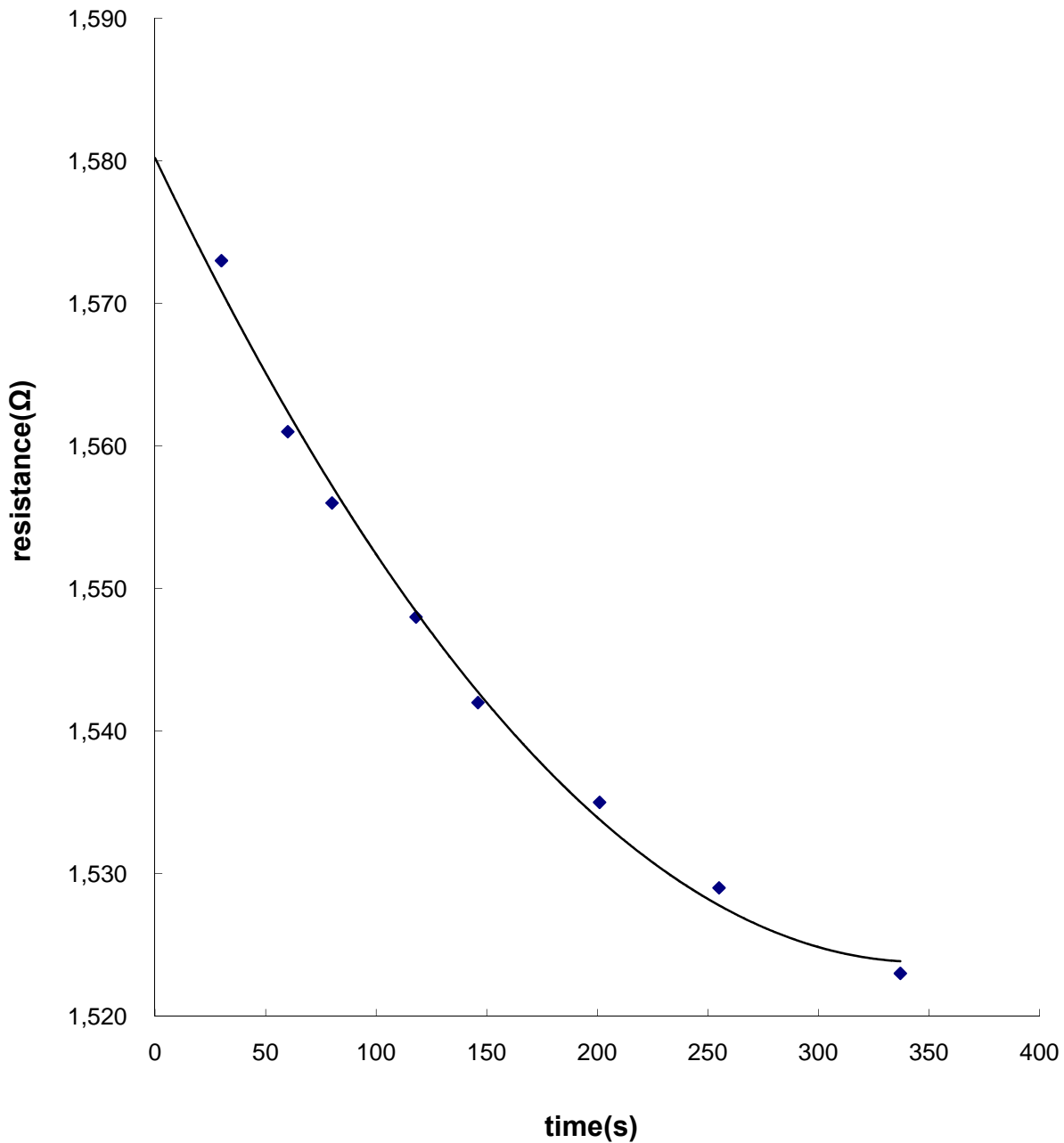
59,25 K

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Voltage	400 V	Current	6,0 A	Frequency	50,0	kW
Speed	1451 r/min	Duty	S1	Connection	Δ	Hz
Ins.class	F	Weight	56 kg		IP55	

RESISTANCE CURVE



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												IE:3
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Voltage	400	V	Current	6,0	A	Frequency	50,0				Hz	
Speed	1451	r/min	Duty	S1		Connection	Δ					
Ins.class	F		Weight	56	kg					IP55		
LOAD TEST												
V	HZ	I1	I2	I3	mul.	W1	W2	mul.	r/min	Resista nce Ω	Temp eratur e °C	Torqu r N.m
400,1	50,01	4,034	4,071	4,041	2	748,3	1630,3	2	1430,5	1,5693	75,7	27,6956
400,5	50,00	3,569	3,622	3,587	2	631,1	1450,6	2	1440,0	1,5713	76,1	24,3395
399,9	50,00	3,161	3,126	3,167	2	518,7	1283,5	2	1449,8	1,5718	76,2	21,1014
400,4	50,00	2,659	2,707	2,658	2	367,8	1072,9	2	1461,3	1,5693	75,7	16,8232
399,9	50,00	2,217	2,237	2,188	2	214,4	866,7	2	1472,2	1,5627	74,4	12,4378
400,4	50,00	1,883	1,903	1,835	2	65,3	702,8	2	1481,1	1,5567	73,2	8,54564
400,8	50,00	1,704	1,722	1,661	2	-32,4	595,4	2	1487,2	1,5526	72,4	5,97744
400,3	50,0	1,534	1,511	1,480	2,0	-199,5	414,0	2	1497,1	1,5476	71,4	1,53
400,4	50,0	1,530	1,495	1,456	2,0	-264,0	361,6	2	1500,0	1,5173	65,4	0,00
slope A= 0,11717		intercept B= -8,55			relative coefficient r= 0,975							
LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pz W	N.m	EFF %	P.F	
150,0	4500	8,79	5209,6	187,6	5,334	260,9	106,9	719,0	30,2	86,38	0,855	
125,0	3750	7,38	4293,2	132,3	4,283	172,6	73,4	542,0	25,0	87,35	0,839	
100,0	3000	6,04	3403,5	88,5	3,239	103,1	46,2	401,5	19,9	88,14	0,814	
75,0	2250	4,93	2555,9	59,0	2,334	55,2	25,6	303,6	14,8	88,03	0,748	
50,0	1500	3,97	1738,2	38,2	1,512	23,7	11,1	236,8	9,8	86,30	0,632	
25,0	750	3,23	945,6	25,4	0,707	5,6	2,7	197,4	4,8	79,31	0,422	

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Speed	1451 r/min	Duty	S1	Connection	Δ	Hz
Ins.class	F	Weight	56 kg		IP55	

LOAD CURVE

