

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K80-4	Poles	4	Power	0,75	kW	IE:3	
Voltage	400	V	Current	1,8	A	Frequenc	50	Hz
Speed	1435	r/min	Duty	S1	Connecti	Y		
Ins.class	F	Weight	24	kg		IP55		
MAJOR CONTENTS				TEST VALUE				
95,0	°C	PHASE RESISTANCE OF WINDING	Ω	8,0027				
NO LOAD CURRENT			A	1,194				
NO LOAD INPUT			W	78,03				
CORE LOSS(Pfe)			W	37,05				
WINDAGE FRICTION LOSS(Pfw)			W	10,08				
STATOR WINDING LOSS(Pcu1)			W	67,21				
ROTOR WINDING LOSS(Pcu2)			W	34,87				
STRAY LOAD LOSS(Ps)			W	8,19				
LOCKED ROTOR CURRENT			A	10,510				
LOCKED ROTOR INPUT @ FULL LOAD			W	6116				
LOCKED ROTOR TORQUE			N.m	16,0				
PULL OUT TORQUE			N.m	15,7				
LOCKED ROTOR CURRENT/RATED CURRENT			P.U	5,92				
LOCKED ROTOR TORQUE/RATED TORQUE			P.U	3,19				
PULL OUT TORQUE/RATED TORQUE			P.U	3,13				
FULL LOAD TORQUE			N.m	4,99				
FULL LOAD CURRENT			A	1,776				
FULL LOAD SLIP			%	4,341				
INPUT @ FULL LOAD			kW	0,908				
FULL LOAD SPEED			r/min	1434,9				
EFFICIENCY @ FULL LOAD			%	82,63				
EFFICIENCY @ 75% LOAD			%	82,28				
POWER FACTOR @ FULL LOAD				0,738				
STATOR WINDING TEMPERATURE RISE			K	31				
D.E. BEARINGS TEMPERATURE BY PT100			°C	45,1				
STATOR WINDING TEMPERATURE			°C	65,7				
High voltage test			V	1800	Imin			
Insulation resistance			MΩ	500				
NOISE(LW)			dB(A)	53				
VIBRATION			mm/s	0,3				

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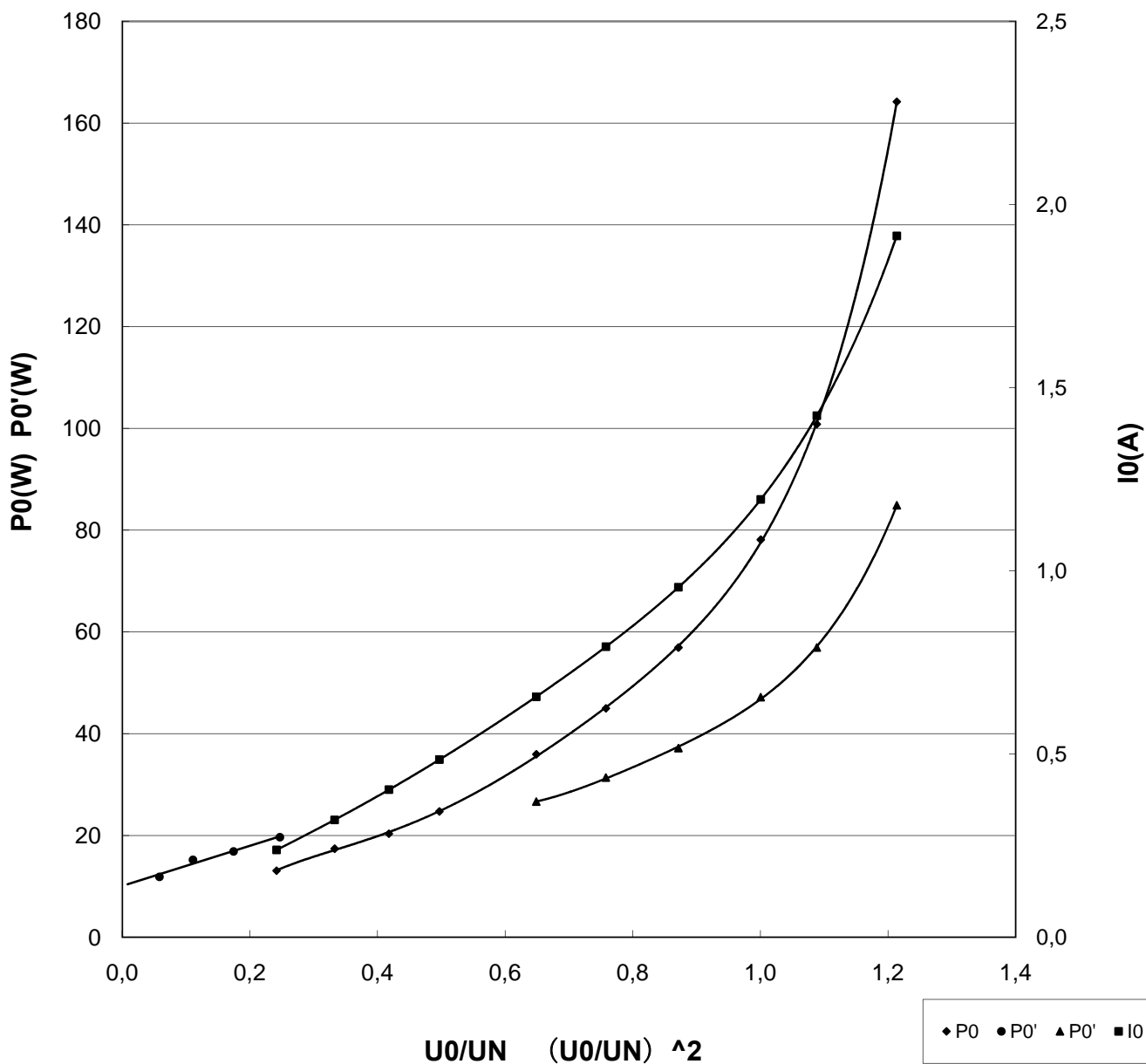
Type	K80-4		Poles	4		Power	0,75 kW		IE:3		
Voltage	400	V	Current	1,8	A	Frequency	50 Hz				
Speed	1435	r/min	Duty	S1		Connection	Y				
Ins.class	F		Weight	24	kg	IP55					
NO LOAD TEST											
VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
485,5	1	50	1,925	1,951	1,867	1	-432,0	596,2	1	62,4	7,212
435,4	1	50	1,427	1,443	1,401	1	-287,1	387,9	1	62,8	7,222
400,2	1	50	1,198	1,204	1,183	1	-217,9	296,0	1	63,0	7,227
348,6	1	50	0,958	0,958	0,950	1	-148,6	205,5	1	62,9	7,224
303,2	1	50	0,797	0,792	0,790	1	-104,5	149,5	1	62,7	7,219
259,6	1	50	0,660	0,655	0,654	1	-71,4	107,4	1	62,4	7,212
198,8	1	50	0,488	0,484	0,483	1	-37,9	62,6	1	61,0	7,178
167,2	1	50	0,406	0,402	0,401	1	-24,6	44,9	1	59,6	7,144
133,2	1	50	0,323	0,319	0,319	1	-13,0	30,4	1	59,3	7,137
96,7	1	50	0,241	0,237	0,236	1	-5,0	18,1	1	59,0	7,130
data calculation of no load											
V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'					
121,4%	1,21	1,915	164,2	1,473	79,30	84,90					
108,8%	1,09	1,424	100,8	1,185	43,90	56,94					
100,1%	1,00	1,195	78,1	1,001	30,95	47,18					
87,2%	0,87	0,955	56,9	0,760	19,78	37,15					
75,8%	0,76	0,793	45,0	0,574	13,62	31,36					
64,9%	0,65	0,656	36,0	0,421	9,32	26,64					
49,7%	0,50	0,485	24,7	0,247	5,06	19,66					
41,8%	0,42	0,403	20,3	0,175	3,48	16,87					
33,3%	0,33	0,320	17,4	0,111	2,19	15,21					
24,2%	0,24	0,238	13,1	0,058	1,21	11,86					
RESULTS AT: 400 V											
N.L.AMP	1,19	N.L.LOSS(W)	78,03	Pw(W)	10,1	Pe(W)	37,1				

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Voltage	400	V	Current	1,8	A	Frequency	50,0
Speed	1435	r/min	Duty	S1	Connection	Y	
Ins.class	F		Weight	24	kg	IP55	

No Load Curve



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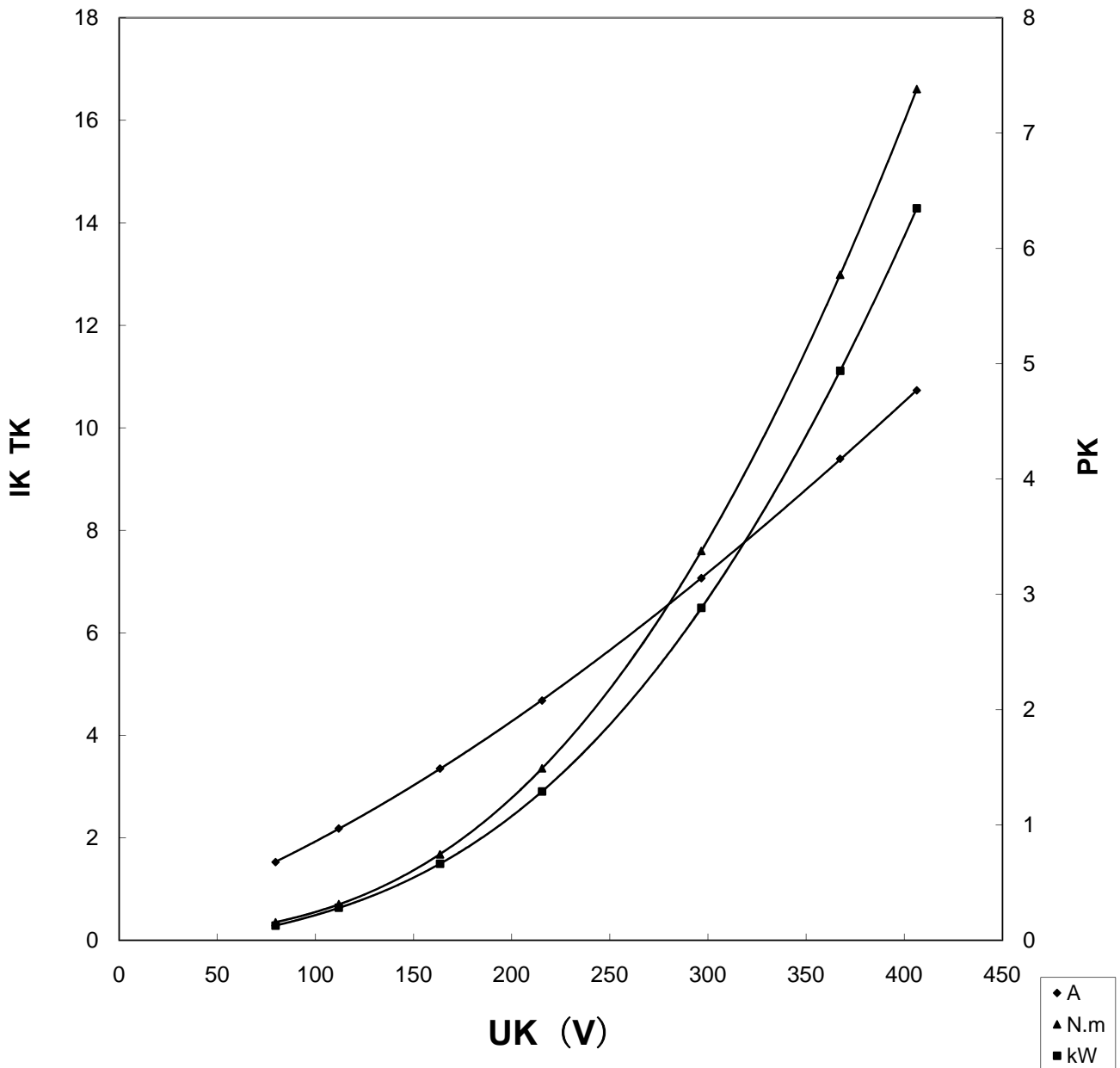
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Voltage	400	V	Current	1,8	A	Frequency	50,0		Hz	
Speed	1435	r/min	Duty	S1		Connection	Y			
Ins.class	F		Weight	24	kg	IP55				
LOCKED ROTOR TEST										
VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu (kg.m)	
406,4	1,0	2,147	2,145	2,146	5,0	270,8	998,8	5,0	1,69	
367,4	1,0	1,881	1,877	1,878	5,0	200,6	787,2	5,0	1,33	
296,6	1,0	1,415	1,414	1,412	5,0	102,7	473,9	5,0	0,78	
215,5	1,0	2,339	2,347	2,333	2,0	86,3	559,4	2,0	0,34	
163,5	1,0	1,674	1,682	1,673	2,0	33,4	298,5	2,0	0,17	
111,9	1,0	1,094	1,092	1,090	2,0	11,3	130,2	2,0	0,07	
79,7	1,0	0,765	0,764	0,763	2,0	0,0	64,3	2,0	0,04	
data calculation of locked rotor										
Uk	IK	PK	TK		LOGUk	LOGIk	LOGPk	LOGTk		
V	A	kW	N.m							
406,42	10,73	6,348	16,61		2,6090	1,0306	0,8026	1,2203		
367,37	9,39	4,939	12,99		2,5651	0,9729	0,6936	1,1135		
296,63	7,07	2,883	7,60		2,4722	0,8492	0,4598	0,8807		
215,47	4,68	1,291	3,36		2,3334	0,6702	0,1111	0,5260		
163,47	3,35	0,664	1,68		2,2134	0,5254	-0,1780	0,2249		
111,89	2,18	0,283	0,71		2,0488	0,3392	-0,5482	-0,1507		
79,68	1,53	0,129	0,35		1,9014	0,1841	-0,8908	-0,4518		
performance collection of locked rotor										
	at rated volts		at rated current		at 2.5 times rated current		at 100V			
VOLTS (V)	400		92,067		214,1		100,0			
AMPS (A)	10,5		1,8		4,5		1,95			
INPUT (kW)	6,12				1,0		0,240			
TORQUE (N.m)	16,01									

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Voltage	400 V	Current	1,8 A	Frequency	50,0	kW
Speed	1435 r/min	Duty	S1	Connection	Y	Hz
Ins.class	F	Weight	24 kg			IP55

Locked Rotor Curve



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Speed	1435	r/min	Duty	S1		Connection	Y				
Ins.class	F		Weight	24	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
9,00	400,7	1,786	1,801	1,784	1	186,0	732,6	1	42,6	—	62,3	62,4	—	—	—	—	—	—	44,3	—	26,8
9,30	400,6	1,778	1,793	1,776	1	183,9	729,1	1	44,5	—	64,3	64,4	—	—	—	—	—	—	46,1	—	26,8
9,59	400,2	1,775	1,789	1,772	1	183,2	726,6	1	46,1	—	65,0	65,1	—	—	—	—	—	—	48,4	—	26,8
10,29	400,4	1,781	1,799	1,780	1	186,5	731,8	1	46,8	—	65,6	65,7	—	—	—	—	—	—	48,7	—	27,2
10,59	400,2	1,766	1,791	1,768	1	181,3	727,3	1	45,1	—	65,7	65,7	—	—	—	—	—	—	48,3	—	26,9
The average of the last three		1,780		A		912,2		W		45,1	—	65,4	65,7	—	—	—	—	—	48,3	—	27,0

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)	28	45	57	75	89	105	126	143		
RESISTANC	7,1021	7,0768	7,0611	7,0389	7,0263	7,0105	6,9947	6,9842		

WINDING RESISTANCE(COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	6,3516	6,3515	6,3505	6,351	6,3505	26,9 °C

resistance value at 0 sec (Ω)

7,14765

calculation value of temp.rising

32,81 K

30 S (Ω)

7,09894

calculation value of temp.rising

30,80 K

full load curent

1,78 A

modify value of temp. rising

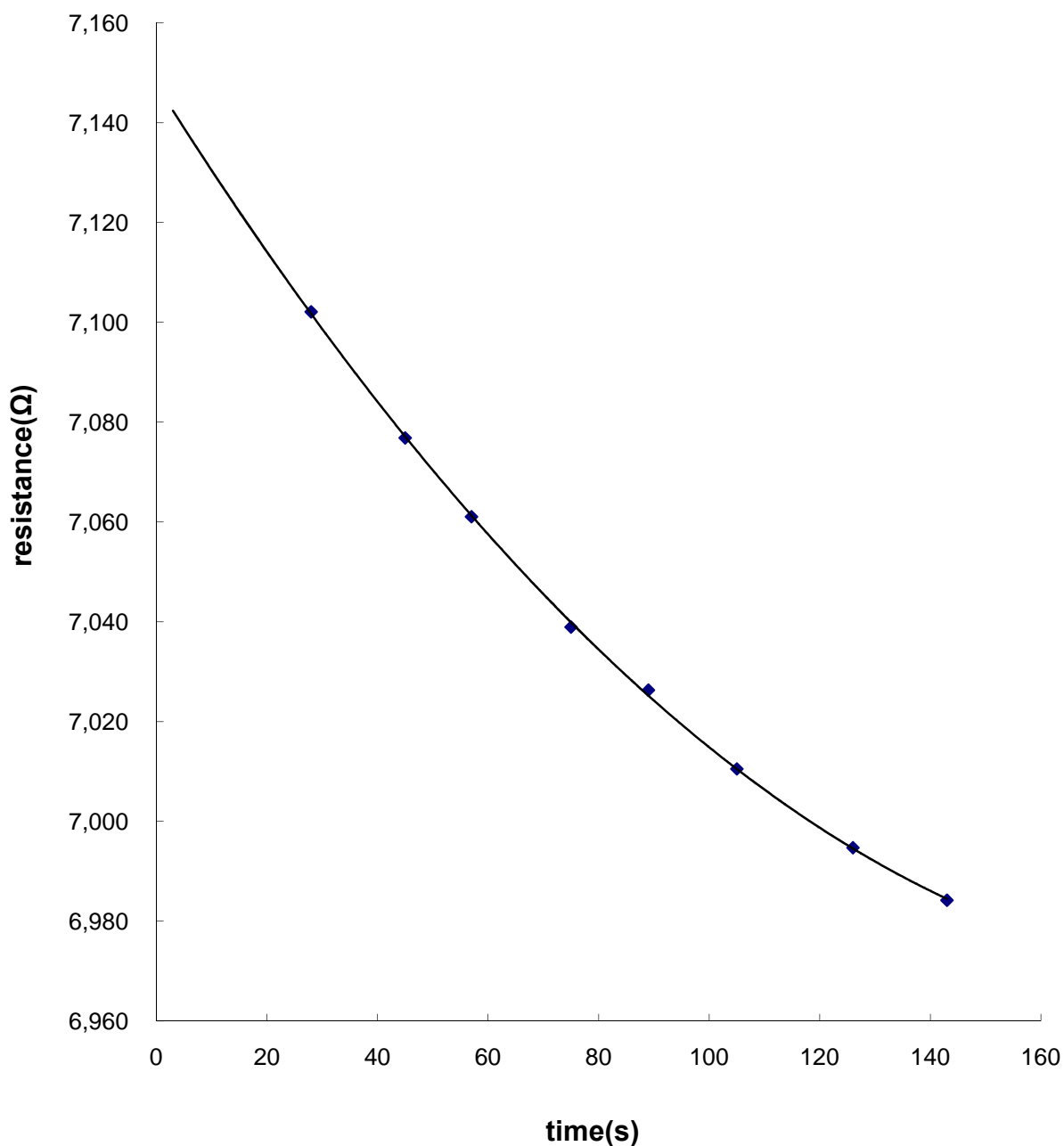
30,66 K

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Voltage	400	V	Current	1,8	A	Frequency	50,0	kW
Speed	1435	r/min	Duty	S1		Connection	Y	Hz
Ins.class		F	Weight	24	kg		IP55	

RESISTANCE CURVE



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Speed	1435	r/min	Duty	S1		Connection	Y		Hz	
Ins.class	F		Weight	24	kg	IP55				

LOAD TEST

V	HZ	I1	I2	I3	mul.	W1	W2	mul.	r/min	Resistance Ω	Temperature °C	Torque N.m
400,3	49,99	2,374	2,390	2,375	1	387,6	988,4	1	1394,9	7,3479	68,0	7,52
400,2	50,01	2,036	2,050	2,035	1	283,6	839,9	1	1416,1	7,3746	69,1	6,16
400,4	50,00	1,756	1,771	1,754	1	183,2	711,6	1	1434,7	7,3794	69,3	4,88
400,4	50,02	1,592	1,606	1,589	1	115,5	630,3	1	1446,5	7,3697	68,9	4,05
400,1	50,01	1,520	1,533	1,515	1	82,3	591,1	1	1451,7	7,3479	68,0	3,62
400,1	50,00	1,371	1,384	1,364	1	0,0	501,8	1	1463,9	7,3358	67,5	2,61
400,1	50,00	1,245	1,254	1,233	1	-111,5	389,6	1	1480,4	7,3067	66,3	1,22
400,2	50,0	1,196	1,195	1,190	1,0	-171,4	334,5	1	1493,0	7,2921	65,7	0,52
400,1	50,0	1,195	1,196	1,189	1,0	-218,3	296,6	1	1500,0	7,2169	62,6	0,00

slope A= 0,33124

intercept B= -0,52

relative coefficient r= 0,979

LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pz W	N.m	EFF %	P.F
150,0	1125	2,42	1402,5	124,3	7,031	87,3	19,5	278,2	7,7	80,21	0,838
125,0	938	2,07	1147,2	91,5	5,639	57,4	13,2	209,2	6,3	81,72	0,799
100,0	750	1,78	907,6	67,2	4,341	34,9	8,2	157,4	5,0	82,63	0,738
75,0	563	1,53	683,6	50,1	3,241	19,3	4,5	121,1	3,7	82,28	0,644
50,0	375	1,36	472,5	39,2	2,234	8,9	2,0	97,1	2,4	79,36	0,503
25,0	188	1,24	270,2	32,7	1,257	2,5	0,5	82,8	1,2	69,39	0,315

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Speed	1435 r/min		Duty	S1		Connection	Y		
Ins.class	F		Weight	24 kg			IP55		

LOAD CURVE

