

# VALIADIS S.A.

## ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K80-2	Poles	2	Power	0,75	kW	IE:3
Voltage	400 V	Current	1,6 A	Frequency	50	Hz	
Speed	2886 r/min	Duty	S1	Connecti	Y		
Ins.class	F	Weight	19 kg		IP55		
MAJOR CONTENTS				TEST VALUE			
95,0 °C PHASE RESISTANCE OF WI	Ω						8,3888
NO LOAD CURRENT	A						0,620
NO LOAD INPUT	W						51,43
CORE LOSS(Pfe)	W						20,70
WINDAGE FRICTION LOSS(Pfw)	W						23,13
STATOR WINDING LOSS(Pcu1)	W						57,46
ROTOR WINDING LOSS(Pcu2)	W						31,17
STRAY LOAD LOSS(Ps)	W						11,86
LOCKED ROTOR CURRENT	A						11,685
LOCKED ROTOR INPUT @ FULL LOAD	W						5466
LOCKED ROTOR TORQUE	N.m						6,4
PULL OUT TORQUE	N.m						8,7
LOCKED ROTOR CURRENT/RATED CURF	P.U						7,22
LOCKED ROTOR TORQUE/RATED TORQI	P.U						2,52
PULL OUT TORQUE/RATED TORQUE	P.U						3,46
FULL LOAD TORQUE	N.m						2,48
FULL LOAD CURRENT	A						1,619
FULL LOAD SLIP	%						3,817
INPUT @ FULL LOAD	kW						0,895
FULL LOAD SPEED	r/min						2885,5
EFFICIENCY @ FULL LOAD	%						83,81
EFFICIENCY @ 75% LOAD	%						84,43
POWER FACTOR @ FULL LOAD							0,798
STATOR WINDING TEMPERATURE RISE	K						27
D.E. BEARINGS TEMPERATURE BY PT10	°C						—
STATOR WINDING TEMPERATURE	°C						39,8
High voltage test	V	1800				Imin	
Insulation resistance	MΩ						500
NOISE(LW)	dB(A)						59
VIBRATION	mm/s						0,3

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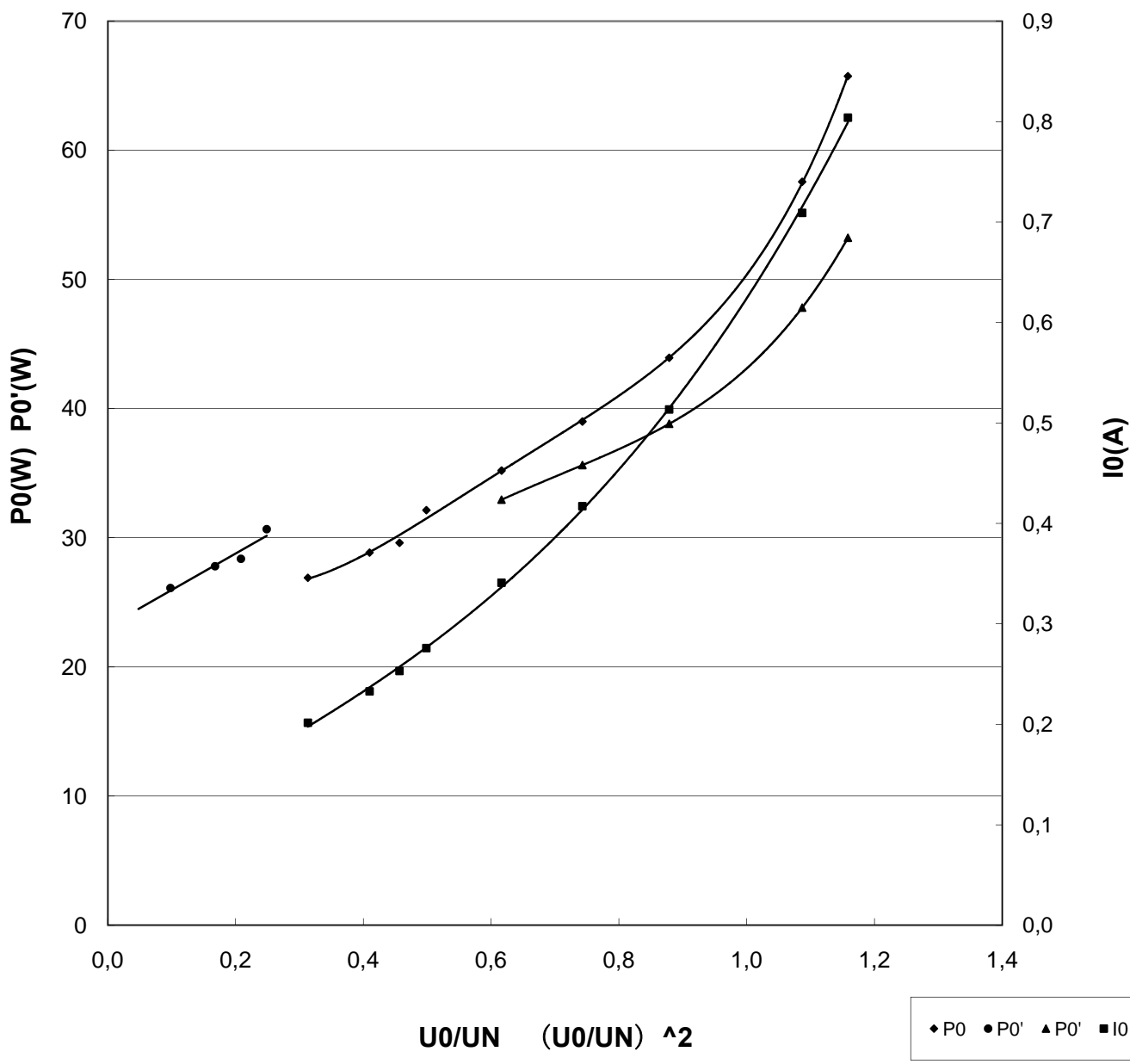
Type	K80-2		Poles	2		Power	0,75 kW		IE:3		
Voltage	400	V	Current	1,6	A	Frequency	50 Hz				
Speed	2886	r/min	Duty	S1		Connection	Y				
Ins.class	F		Weight	19	kg	IP55					
NO LOAD TEST											
VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
463,4	1	50	0,806	0,806	0,800	1	-151,0	216,74	1	19,0	6,45683
434,7	1	50	0,710	0,710	0,707	1	-122,7	180,26	1	19,2	6,46192
351,5	1	50	0,515	0,512	0,514	1	-65,6	109,54	1	19,4	6,46700
297,2	1	50	0,418	0,416	0,417	1	-40,8	79,8	1	19,3	6,46446
246,5	1	50	0,342	0,339	0,341	1	-20,4	55,6	1	19,3	6,46446
199,5	1	50	0,277	0,275	0,276	1	-9,0	41,1	1	19,1	6,45937
182,6	1	50	0,254	0,252	0,253	1	-5,9	35,5	1	19,0	6,45683
163,9	1	50	0,234	0,232	0,232	1	-2,1	30,9	1	18,9	6,45429
125,3	1	50	0,203	0,201	0,201	1	4,0	22,9	1	18,7	6,44921
data calculation of no load											
V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'					
115,8%	1,16	0,804	65,7	1,342	12,52	53,22					
108,7%	1,09	0,709	57,6	1,181	9,75	47,82					
87,9%	0,88	0,514	43,9	0,772	5,12	38,82					
74,3%	0,74	0,417	39,0	0,552	3,37	35,63					
61,6%	0,62	0,341	35,2	0,380	2,25	32,95					
49,9%	0,50	0,276	32,1	0,249	1,47	30,66					
45,7%	0,46	0,253	29,6	0,208	1,24	28,37					
41,0%	0,41	0,233	28,8	0,168	1,05	27,80					
31,3%	0,31	0,202	26,9	0,098	0,79	26,11					
RESULTS AT: 400 V											
N.L.AMP	0,62	N.L.LOSS(W)	51,43	Pw(W)	23,1	Pe(W)	20,7				

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Type	K80-2		Poles	2		Power	0,75 kW		IE:3
Voltage	400	V	Current	1,6	A	Frequency	50,0 Hz		
Speed	2886	r/min	Duty	S1		Connection	Y		
Ins.class	F		Weight	19	kg		IP55		

### No Load Curve



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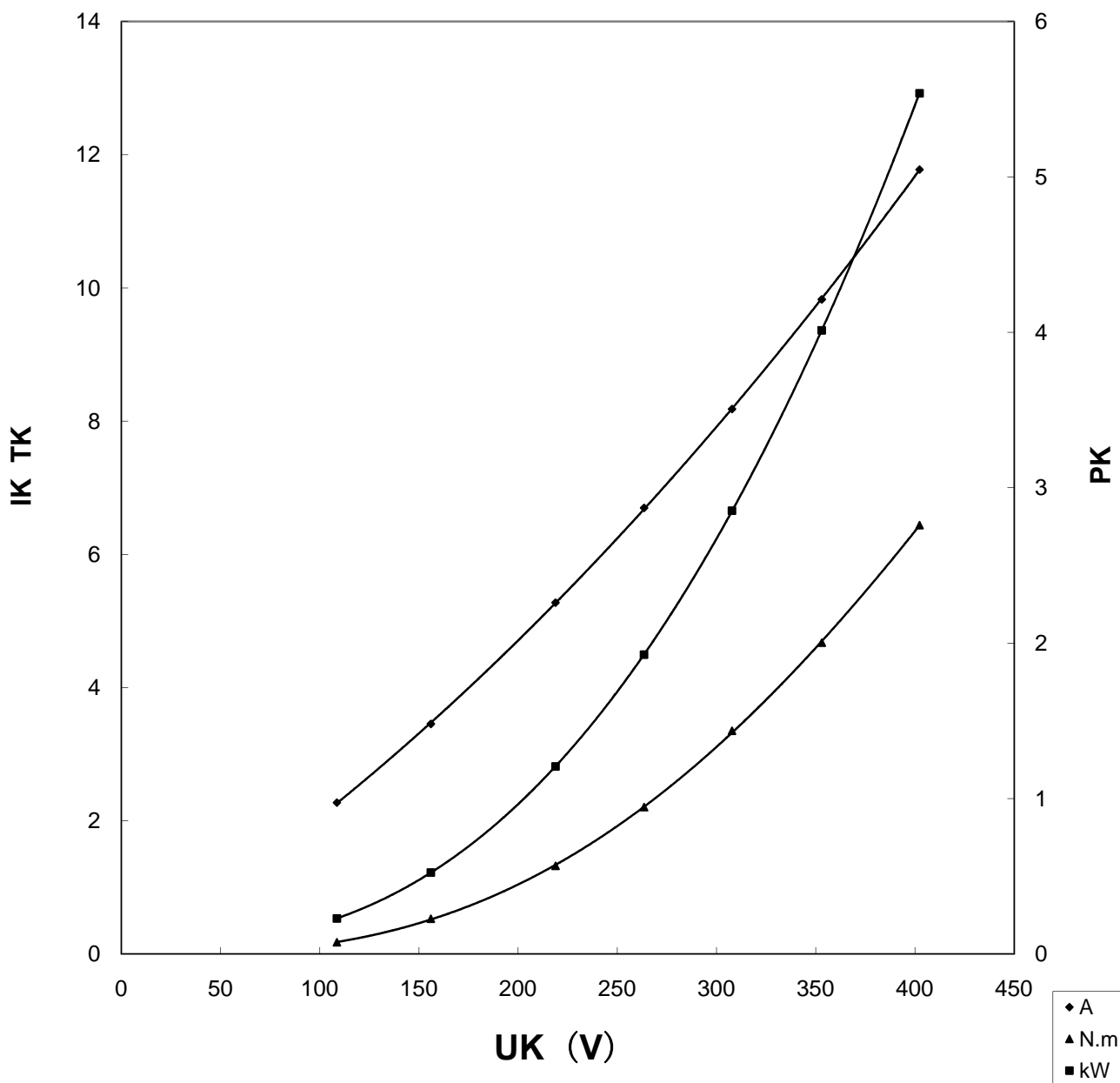
Type	K80-2		Poles	2		Power	0,75		IE:3	kW
Voltage	400	V	Current	1,6	A	Frequency	50,0		Hz	
Speed	2886	r/min	Duty	S1		Connection	Y			
Ins.class	F		Weight	19	kg	IP55				
LOCKED ROTOR TEST										
VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqur ( kg.m)	
402,3	1,0	2,326	2,313	2,427	5,0	225,0	882,6	5,0	0,66	
353,1	1,0	1,938	1,930	2,028	5,0	157,6	644,8	5,0	0,48	
307,8	1,0	1,609	1,608	1,691	5,0	106,5	464,0	5,0	0,34	
263,5	1,0	3,286	3,297	3,463	2,0	158,5	804,7	2,0	0,23	
218,8	1,0	2,583	2,604	2,725	2,0	83,4	520,0	2,0	0,14	
156,0	1,0	1,690	1,716	1,775	2,0	23,9	238,3	2,0	0,05	
108,6	1,0	1,117	1,131	1,159	2,0	6,6	107,7	2,0	0,02	
data calculation of locked rotor										
Uk	IK	PK	TK	LOGUk	LOGIk	LOGPk	LOGTk			
V	A	kW	N.m							
402,32	11,78	5,538	6,44	2,6046	1,0710	0,7434	0,8088			
353,05	9,83	4,012	4,67	2,5478	0,9925	0,6034	0,6697			
307,79	8,18	2,853	3,35	2,4883	0,9128	0,4552	0,5253			
263,47	6,70	1,926	2,21	2,4207	0,8259	0,2847	0,3434			
218,84	5,27	1,207	1,32	2,3401	0,7222	0,0816	0,1216			
156,00	3,45	0,524	0,53	2,1931	0,5383	-0,2803	-0,2764			
108,63	2,27	0,229	0,18	2,0360	0,3564	-0,6409	-0,7535			
performance collection of locked rotor										
at rated volts		at rated current		at 2.5 times rated current		at 100V				
VOLTS ( V )	400		82,307		174,7		100,0			
AMPS ( A )	11,7		1,6		4,0		1,99			
INPUT ( kW )	5,47				0,8		0,104			
TORQUE ( N.m)	6,36									

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Voltage	400 V	Current	1,6 A	Frequency	50,0	kW
Speed	2886 r/min	Duty	S1	Connection	Y	Hz
Ins.class	F	Weight	19 kg			IP55

### Locked Rotor Curve



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Voltage	400	V	Current	1,6	A	Frequency	50	Hz		
Speed	2886	r/min	Duty	S1		Connection	Y			
Ins.class	F		Weight	19	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	
9,25	400,5	1,618	1,614	1,607	1	302,4	611,3	1	—	—	41,2	41,6	—	—	—	—	—	—	—	—	—	8,7
9,55	400,4	1,619	1,615	1,609	1	302,8	611,7	1	—	—	39,7	40,2	—	—	—	—	—	—	—	—	—	8,8
10,10	400,4	1,620	1,616	1,609	1	303,0	611,9	1	—	—	39,3	39,8	—	—	—	—	—	—	—	—	—	8,8
The average of the last three		1,614		A		914,367		W	—	—	40,1	39,8	—	—	—	—	—	—	—	—	—	8,8

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)	38	52	63	75	91	107	121	136		
RESISTANC	6,85400	6,83700	6,82400	6,81000	6,79600	6,78000	6,76900	6,75600		

### WINDING RESISTANCE(COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	°C					
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	6,18	6,225	6,18	6,195	6,18	8,7 °C

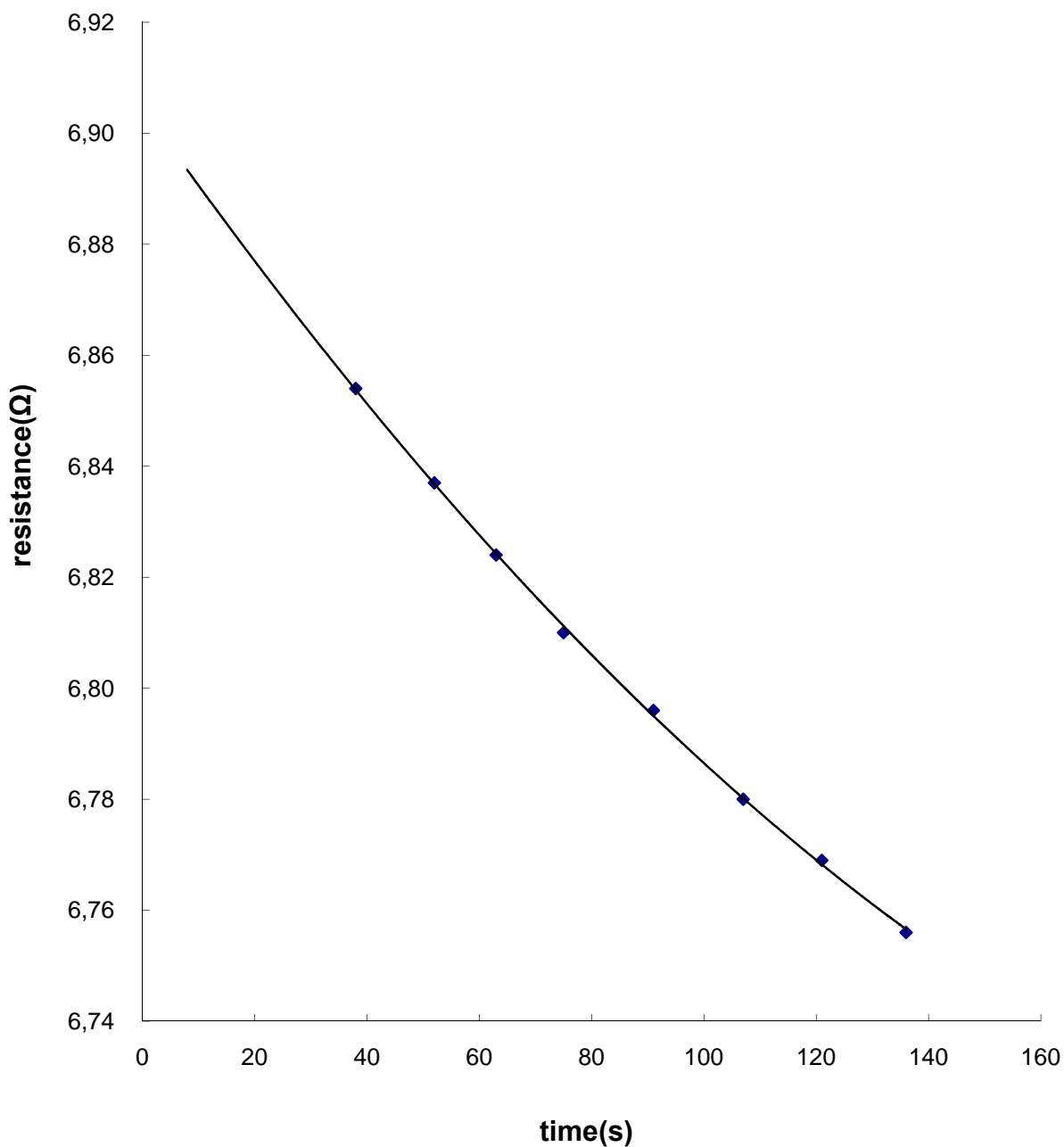
resistance value at 0 sec ( Ω )	6,904774	calculation value of temp.rising	28,51	K
30 S ( Ω )	6,863547	calculation value of temp.rising	26,89	K
full load curent	1,63 A	modify value of temp. rising	27,41	K

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Type	K80-2		Poles	2		output Power	0,75	IE:3 kW
Voltage	400	V	Current	1,6	A	Frequency	50,0	Hz
Speed	2886	r/min	Duty	S1		Connection	Y	
Ins.class		F	Weight	19	kg		IP55	

### RESISTANCE CURVE



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Voltage	400	V	Current	1,6	A	Frequency	50,0		kW	
Speed	2886	r/min	Duty	S1		Connection	Y		Hz	
Ins.class	F		Weight	19	kg	IP55				

### LOAD TEST

V	HZ	I1	I2	I3	mul.	W1	W2	mul.	r/min	Resistance Ω	Temperature °C	Torque N.m
400,1	50,02	2,503	2,491	2,477	1	507,2	923,0	1	2812,7	7,0034	40,5	3,7095
400,0	50,02	2,077	2,064	2,053	1	408,9	766,0	1	2851,3	7,0568	42,6	3,0537
400,1	50,02	1,680	1,665	1,658	1	308,4	618,9	1	2887,8	7,0618	42,8	2,3882
400,3	50,02	1,361	1,348	1,344	1	219,6	499,8	1	2916	7,0440	42,1	1,8107
399,8	50,02	1,059	1,045	1,045	1	123,4	380,3	1	2944,2	6,9881	39,9	1,1941
400,0	50,02	0,924	0,912	0,914	1	73,1	323,0	1	2957,5	6,9500	38,4	0,8711
400,0	50,02	0,827	0,817	0,820	1	31,1	276,1	1	2968,5	6,9169	37,1	0,6068
400,1	50,0	0,685	0,675	0,679	1,0	19,8	164,1	1	2971,2	6,8941	36,2	0,14
399,9	50,0	0,628	0,622	0,627	1,0	-63,5	145,8	1	3000,0	6,7949	32,3	0,00

slope A=1.936

intercept B=2.71

relative coefficient r=0.996

LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pz W	N.m	EFF %	P.F
150,0	1125	2,46	1413,6	133,0	6,563	82,7	28,6	288,2	3,8	79,58	0,829
125,0	938	2,01	1142,7	88,9	5,084	52,5	19,1	204,4	3,1	82,04	0,819
100,0	750	1,62	894,9	57,5	3,817	31,2	11,9	144,3	2,5	83,81	0,798
75,0	563	1,28	666,2	35,8	2,750	16,8	6,5	102,9	1,8	84,43	0,753
50,0	375	0,98	450,5	21,2	1,788	7,3	2,8	75,2	1,2	83,24	0,661
25,0	188	0,76	245,7	12,5	0,903	1,9	0,7	59,0	0,6	76,32	0,470



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Voltage	400	<b>V</b>	Current	1,6	<b>A</b>	Frequency	50,0	<b>Hz</b>	
Speed	2886	<b>r/min</b>	Duty	S1		Connection	Y		
Ins.class		<b>F</b>	Weight	19	<b>kg</b>		IP55		

### LOAD CURVE

