VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K355M-2		**Poles**	2		**Power**	250,0	**kW**	IE:3
Voltage	400	**V**	**Current**	407,4	**A**	**Frequen**	50	**Hz**	
Speed	2982	**r/min**	**Duty**	S1		**Connecti**	△		
Ins.class		F	**Weight**	1802	**kg**		IP55		

MAJOR CONTENTS		TEST VALUE	
95,0 ℃ PHASE RESISTANCE OF WINDING	Ω	0,0110	
NO LOAD CURRENT	A	76,459	
NO LOAD INPUT	W	6065,88	
CORE LOSS(Pfe)	W	1637,45	
WINDAGE FRICTION LOSS(Pfw)	W	4369,43	
STATOR WINDING LOSS(Pcu1)	W	1789,44	
ROTOR WINDING LOSS(Pcu2)	W	1541,75	
STRAY LOAD LOSS(Ps)	W	1612,91	
LOCKED ROTOR CURRENT	A	2781,677	
LOCKED ROTOR INPUT @ FULL LOAD	W	745032	
LOCKED ROTOR TORQUE	N.m	1336,9	
PULL OUT TORQUE	N.m	2272,1	
LOCKED ROTOR CURRENT/RATED CURRENT	P.U	6,83	
LOCKED ROTOR TORQUE/RATED TORQUE	P.U	1,67	
PULL OUT TORQUE/RATED TORQUE	P.U	2,83	
FULL LOAD TORQUE	N.m	801,0	
FULL LOAD CURRENT	A	407,4	
FULL LOAD SLIP	%	0,599	
INPUT @ FULL LOAD	kW	260,952	
FULL LOAD SPEED	r/min	2982,0	
EFFICIENCY @ FULL LOAD	%	95,80	
EFFICIENCY @ 75% LOAD	%	95,58	
POWER FACTOR @ FULL LOAD		0,925	
STATOR WINDING TEMPERATURE RISE	K	61	
D.E. BEARINGS TEMPERATURE BY PT100	℃	49,7	
STATOR WINDING TEMPERATURE	℃	80,3	
High voltage test	V	1800	Imin
Insulation resistance	MΩ	500,0	
NOISE (LW)	dB(A)	100	
VIBRATION	mm/s	1,2	

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Speed	2982	r/min	**Duty**	S1		**Connection**	△		
Ins.class	F		**Weight**	1802	**kg**		IP55		

NO LOAD TEST

VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	℃	Ω
483,1	1	50	2,061	2,067	2,278	50	-650,2	787,9	50	67,6	0,00673
441,6	1	50	1,759	1,760	1,910	50	-359,7	487,6	50	67,5	0,00673
400,6	1	50	1,518	1,435	1,646	50	-228,7	350,1	50	67,2	0,00672
342,0	1	50	1,132	1,181	1,245	50	-118,9	232,1	50	66,9	0,00672
297,6	1	50	2,361	2,515	2,607	20	-197,8	463,7	20	66,7	0,00671
249,2	1	50	1,930	2,068	2,122	20	-98,6	351,0	20	66,4	0,00670
199,1	1	50	1,641	1,753	1,805	20	-31,1	266,6	20	66,1	0,00670
179,6	1	50	1,550	1,649	1,699	20	-5,0	238,5	20	65,3	0,00668
154,9	1	50	1,487	1,582	1,621	20	18,9	209,9	20	65,1	0,00668

data calculation of no load

V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'
120,8%	1,21	106,767	6885,0	1,459	115,09	6769,91
110,4%	1,10	90,483	6395,0	1,219	82,64	6312,36
100,1%	1,00	76,650	6070,0	1,003	59,24	6010,76
85,5%	0,86	59,300	5660,0	0,731	35,42	5624,58
74,4%	0,74	49,887	5317,5	0,554	25,05	5292,40
62,3%	0,62	40,800	5047,8	0,388	16,74	5031,02
49,8%	0,50	34,660	4709,3	0,248	12,07	4697,19
44,9%	0,45	32,653	4669,6	0,202	10,68	4658,93
38,7%	0,39	31,267	4575,3	0,150	9,79	4565,54

RESULTS AT: 400 V

N.L.AMP	76,46	N.L.LOSS(W)	6065,88	**Pw(W)**	4369,4	**Pe(W)**	1637,5		

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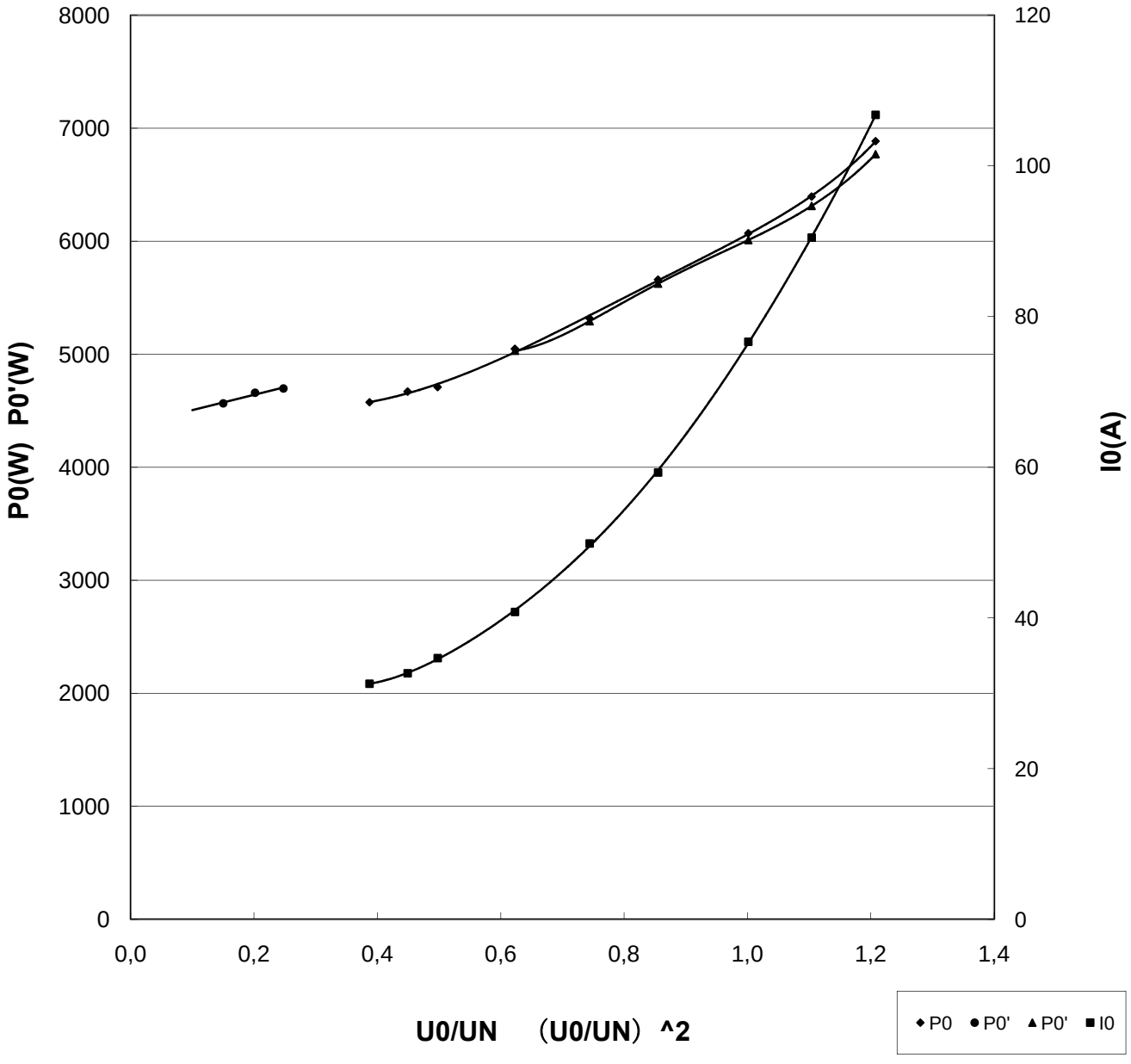
								IE:3
Type	K355M-2		**Poles**	2		**Power**	250,0	**kW**
Voltage	400	**V**	**Current**	407,4	**A**	**Frequency**	50,0	**Hz**
Speed	2982	**r/min**	**Duty**	S1		**Connection**	Δ	
Ins.class		F	**Weight**	1802	**kg**		IP55	

No Load Curve



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Speed	2982	**r/min**	**Duty**	S1		**Connection**	Δ	
Ins.class		F	**Weight**	1802	**kg**		IP55	

LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqur (kg.m)
182,5	1,0	2,653	2,659	2,672	400,0	-113,5	441,4	400,0	20,0
165,1	1,0	2,358	2,364	2,374	400,0	-92,7	354,2	400,0	16,1
147,5	1,0	2,080	2,087	2,094	400,0	-74,2	278,7	400,0	12,6
131,2	1,0	1,831	1,837	1,842	400,0	-58,6	217,8	400,0	9,8
112,6	1,0	1,554	1,559	1,563	400,0	-42,9	158,2	400,0	7,0
102,6	1,0	1,408	1,413	1,418	400,0	-35,6	130,6	400,0	5,7
85,8	1,0	1,173	1,177	1,181	400,0	-24,7	91,1	400,0	3,9

data calculation of locked rotor

Uk V	IK A	PK kW	TK N.m	LOGUk	LOGIk	LOGPk	LOGTk
182,54	1064,55	131,160	195,80	2,2614	3,0272	2,1178	2,2918
165,14	946,10	104,600	157,85	2,2178	2,9759	2,0195	2,1982
147,53	834,91	81,800	123,20	2,1689	2,9216	1,9128	2,0906
131,23	734,80	63,680	95,70	2,1180	2,8662	1,8040	1,9809
112,56	623,39	46,120	68,20	2,0514	2,7948	1,6639	1,8338
102,60	565,26	38,000	56,10	2,0112	2,7522	1,5798	1,7490
85,82	470,80	26,560	38,50	1,9336	2,6728	1,4242	1,5855

performance collection of locked rotor

	at rated volts	at rated current	at 2.5 times rated current	at 100V
VOLTS (V)	400	75,324	175,9	100,0
AMPS (A)	2781,7	405,6	1014,0	550,93
INPUT (kW)	745,03		119,6	36,171
TORQUE (N.m)	1336,89			

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ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

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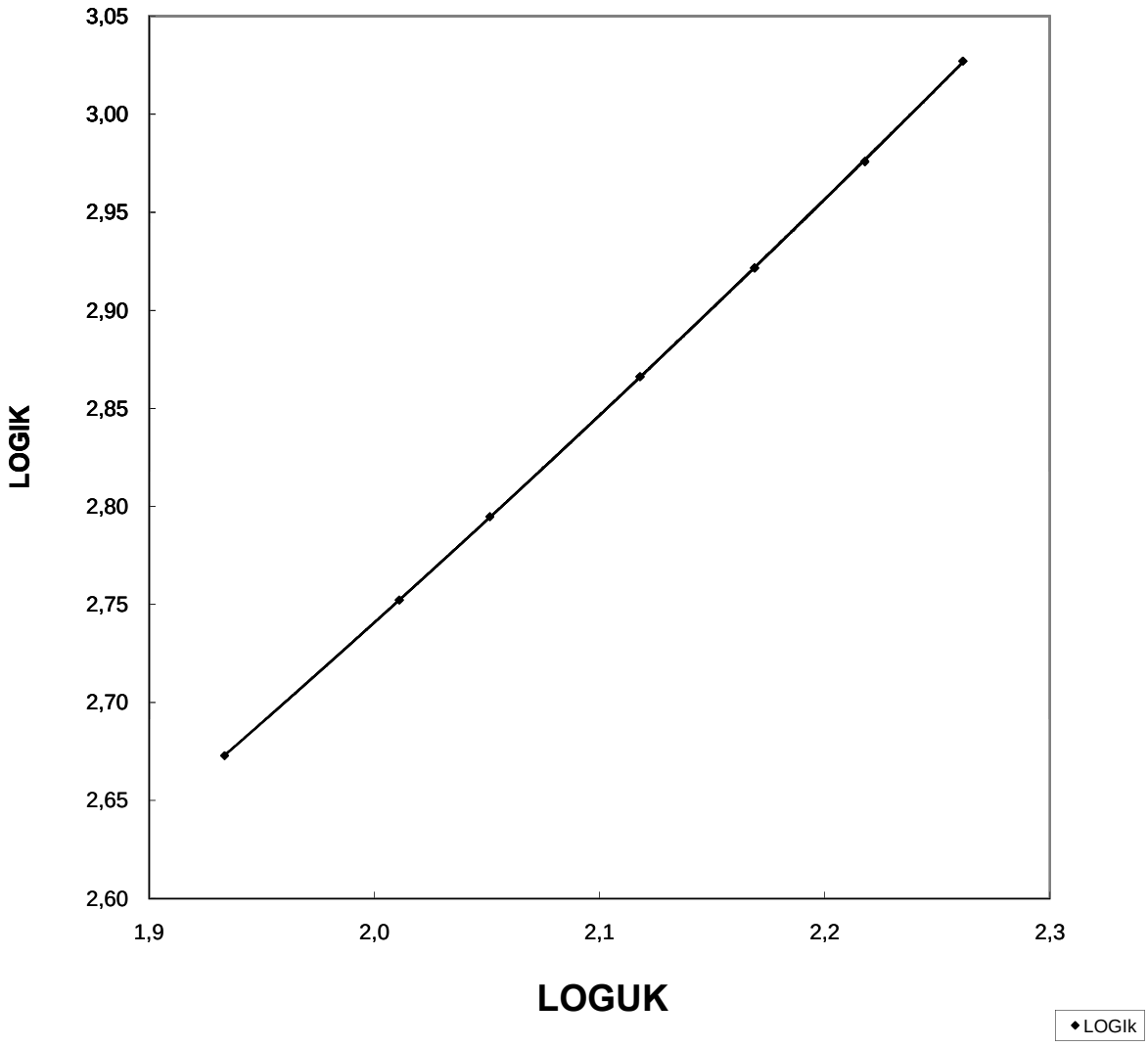
Voltage	400	**V**	**Current**	407,4	**A**	**Frequency**	50,0	**Hz**
Speed	2982	**r/min**	**Duty**	S1		**Connection**	Δ	
Ins.class		F	**Weight**	1802	**kg**		IP55	

LOCKED



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ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K355M-2		**Poles**	2		**Power**	250	**kW**		IE:3
Voltage	400	**V**	**Current**	407,4	**A**	**Frequency**	50	**Hz**		
Speed	2982	**r/min**	**Duty**	S1		**Connection**	△			
Ins.class	F		**Weight**	1802	**kg**		IP55			

TEMPERATURE RISE TEST

TIME (h:min)	V	I1	I2	I3	mul.	W1	W2	mul.	**T1** ℃	**T2** ℃	**T3** ℃	**T4** ℃	**T5** ℃	**T6** ℃	**T7** ℃	**T8** ℃	**T9** ℃	**T10** ℃	**T11** ℃	**T12** ℃	**T13** ℃
10,30	400,4	2,041	2,049	2,010	200	484,8	813,0	200	57,1	—	76,2	73,2	—	—	—	—	—	—	—	—	8,5
11,00	400,0	2,050	2,059	2,019	200	491,5	817,8	200	53,4	—	77,8	74,7	—	—	—	—	—	—	—	—	8,6
11,30	400,2	2,050	2,062	2,029	200	495,1	824,1	200	51,5	—	79,0	75,5	—	—	—	—	—	—	—	—	9,1
12,00	400,3	2,058	2,055	2,027	200	493,2	822,0	200	50,6	—	78,9	75,8	—	—	—	—	—	—	—	—	9,2
12,30	400,3	2,047	2,044	2,021	200	488,4	814,5	200	50,4	—	80,0	76,8	—	—	—	—	—	—	—	—	9,6
13,00	400,2	2,041	2,037	2,018	200	486,0	815,1	200	50,0	—	80,1	77,0	—	—	—	—	—	—	—	—	9,2
13,30	400,3	2,049	2,064	2,037	200	488,2	822,5	200	49,7	—	80,3	77,1	—	—	—	—	—	—	—	—	9,5
The average of the last three			407,936		A	260989		W	49,7	—	80,1	77,1	—	—	—	—	—	—	—	—	9,4

T1 T2：DE BEARING TEMPERATURE

T3~T10：DE WINDING TEMPERATURE

T11：CORE TEMPERATRE

T12: FRAME TEMPERATRE

T13：AMBIENT TEMPERATURE

WINDING RESISTANCE (HOT) AT END OF TEMPERATURE RISE TEST

TIME (S)	84	102	126	145	166	186	207	228		
RESISTANC	0,00680	0,00679	0,00678	0,00677	0,00676	0,00675	0,00673	0,00672		

WINDING RESISTANCE(COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0,005405	0,005385	0,005406	0,00540	0,00539	7,7 ℃
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
						℃

resistance value at 0 sec （Ω）	0,006850	calculation value of temp.rising	64,29 K
120 S （Ω）	0,006780	calculation value of temp.rising	61,13 K
full load curent	407,38 A	modify value of temp. rising	60,97 K

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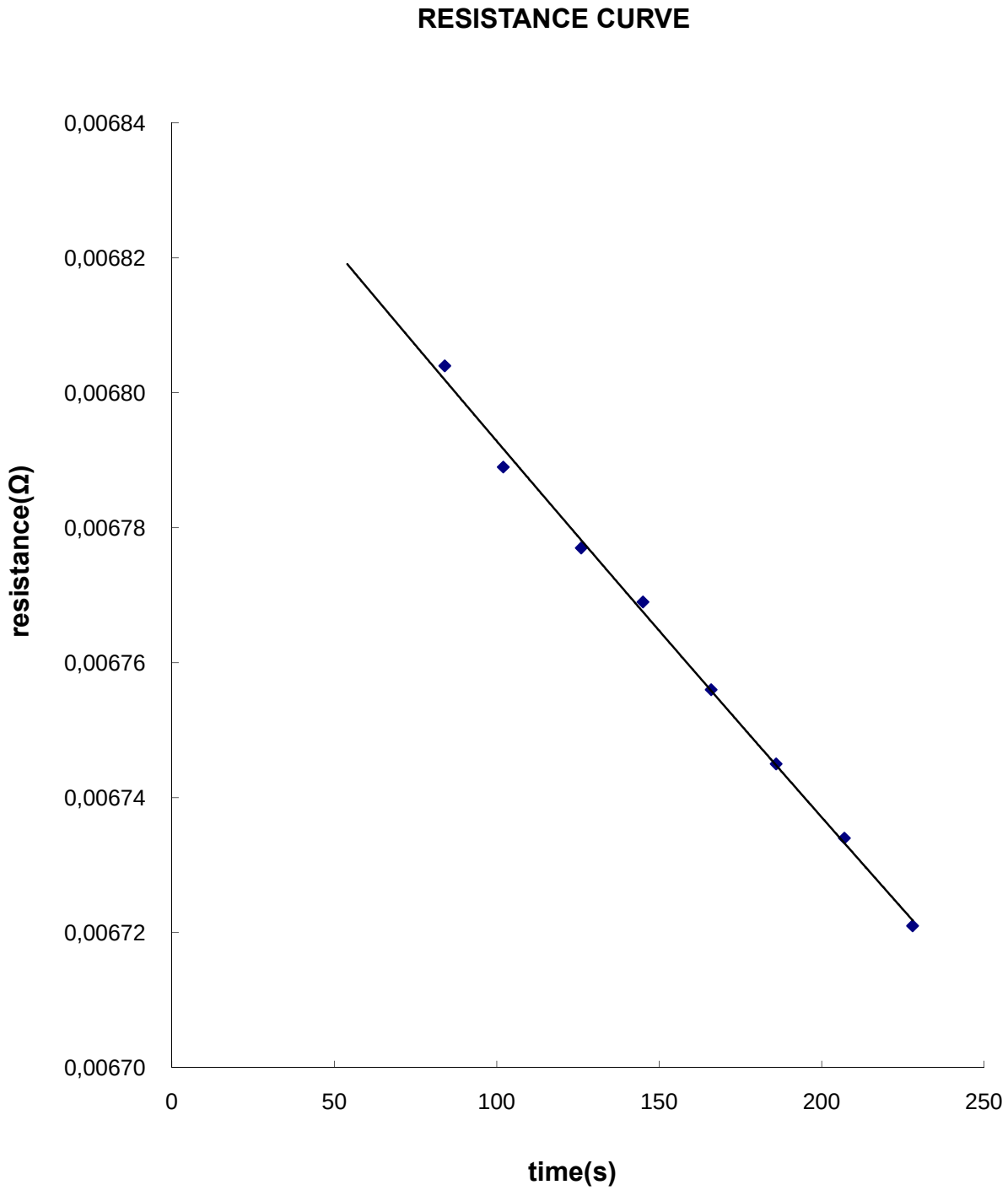
Voltage	400	**V**	**Current**	407,4	**A**	**Frequency**	50,0	**Hz**
Speed	2982	**r/min**	**Duty**	S1		**Connection**	Δ	
Ins.class		F	**Weight**	1802	**kg**		IP55	



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Speed	2982	**r/min**	**Duty**	S1		**Connection**	Δ	
Ins.class		F	**Weight**	1802	**kg**		IP55	

LOAD TEST

V	HZ	I1	I2	I3	mul.	W1	W2	mul.	r/min	Resistance Ω	Temperature °C	Torqur N.m
400,0	50,01	3,038	3,044	3,080	200	719,6	1232,3	200	2971,8	0,0070	80,4	1187,8
400,1	50,01	2,506	2,486	2,541	200	593,7	1016,7	200	2978,2	0,0070	80,4	978,0
399,9	50,00	2,305	2,285	2,338	200	546,9	930,7	200	2979,9	0,0070	80,8	895,6
400,3	50,00	2,030	2,011	2,061	200	483,7	819,1	200	2982,9	0,0070	81,1	788,2
400,4	50,01	1,537	1,518	1,562	200	365,5	620,7	200	2989,4	0,0070	80,8	590,9
400,4	50,00	2,229	2,180	2,268	100	461,5	891,5	100	2993,8	0,0070	78,5	396,7
400,0	50,00	1,383	1,361	1,416	100	223,4	470,3	100	2997,9	0,0070	78,4	189,9
400,3	50,0	1,502	1,496	1,609	50,0	-135,9	435,6	50	2999,6	0,0070	77,7	17,23
400,1	50,0	1,518	1,425	1,649	50,0	-227,6	356,8	50	3000,0	0,0067	68,1	0,00

slope A= 0,00252 intercept B= 474,5 relative coefficient r= 0,994

LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pz W	N.m	EFF %	P.F
150,0	375000	614,36	392658,3	4069,7	1,016	3931,2	3664,0	17671,7	1204,8	95,50	0,923
125,0	312500	509,11	326426,9	2794,7	0,799	2571,4	2530,8	13903,8	1001,3	95,73	0,925
100,0	250000	407,38	260952,1	1789,4	0,599	1541,8	1612,9	10951,0	799,3	95,80	0,925
75,0	187500	306,11	196163,7	1010,3	0,388	751,1	901,1	8669,5	597,5	95,58	0,925
50,0	125000	204,85	131378,4	452,5	0,178	229,5	395,1	7083,9	395,6	95,15	0,926
25,0	62500	138,02	68858,2	205,4	0,073	48,9	99,2	6360,3	198,2	90,77	0,720

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Voltage	400	**V**	**Current**	407,4	**A**	**Frequency**	50,0	**Hz**
Speed	2982	**r/min**	**Duty**	S1		**Connection**	Δ	
Ins.class		F	**Weight**	1802	**kg**		IP55	

LOAD CURVE