

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K132S-4	Poles	4	Power	5,5	KW	IE:3
Voltage	400 V	Current	10,6 A	Frequency	50	HZ	
Speed	1460 r/min	Duty	S1	Connection	Δ		
Ins.class	F	Weight	88 Kg		IP55		
MAJOR CONTENTS				TEST VALUE			
95,0 °C PHASE RESISTANCE OF WINDING	Ω			2,1041			
NO LOAD CURRENT	A			4,687			
NO LOAD INPUT	W			251,20			
CORE LOSS(Pfe)	W			150,82			
WINDAGE FRICTION LOSS(Pfw)	W			57,75			
STATOR WINDING LOSS(Pcu1)	W			223,45			
ROTOR WINDING LOSS(Pcu2)	W			153,61			
STRAY LOAD LOSS(Ps)	W			78,10			
LOCKED ROTOR CURRENT	A			85,469			
LOCKED ROTOR INPUT @ FULL LOAD	W			29570			
LOCKED ROTOR TORQUE	N.m			79,4			
PULL OUT TORQUE	N.m			113,5			
LOCKED ROTOR CURRENT/RATED CURRENT	P.U			8,07			
LOCKED ROTOR TORQUE/RATED TORQUE	P.U			2,20			
PULL OUT TORQUE/RATED TORQUE	P.U			3,14			
FULL LOAD TORQUE	N.m			36,0			
FULL LOAD CURRENT	A			10,59			
FULL LOAD SLIP	%			2,653			
INPUT @ FULL LOAD	KW			6,164			
FULL LOAD SPEED	r/min			1460,2			
EFFICIENCY @ FULL LOAD	%			89,22			
EFFICIENCY @ 75% LOAD	%			89,53			
POWER FACTOR @ FULL LOAD				0,840			
STATOR WINDING TEMPERATURE RISE	K			51			
D.E. BEARINGS TEMPERATURE BY PT100	°C			54,6			
STATOR WINDING TEMPERATURE	°C			75,8			
High voltage test	V	1800		Imin			
Insulation resistance	MΩ			500			
NOISE(LW)	dB(A)			65			
VIBRATION	mm/s			0,4			

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Ins.class	F		Weight	88	Kg	IP55					

NO LOAD TEST

VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
486,2	1	50	4,589	4,542	4,589	2	-948,4	1258,7	2	69,5	1,29433
446,8	1	50	3,293	3,271	3,335	2	-623,2	818,7	2	69,5	1,29433
400,4	1	50	2,348	2,342	2,362	2	-404,1	530,2	2	69,4	1,29390
358,8	1	50	1,859	1,842	1,858	2	-279,3	380,1	2	69,4	1,29390
324,0	1	50	1,573	1,554	1,576	2	-208,5	291,4	2	69,3	1,29348
281,2	1	50	1,296	1,276	1,300	2	-140,4	215,0	2	69,0	1,29220
199,8	1	50	0,871	0,873	0,877	2	-57,4	114,1	2	68,8	1,29135
163,6	1	50	0,707	0,693	0,701	2	-31,5	78,6	2	68,6	1,29050
125,5	1	50	0,542	0,555	0,551	2	-11,2	52,9	2	68,3	1,28923
82,9	1	50	0,444	0,431	0,438	2	0	33,1	2	68,1	1,28838

data calculation of no load

V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'
121,6%	1,22	9,147	620,6	1,478	162,45	458,15
111,7%	1,12	6,600	391,0	1,248	84,56	306,44
100,1%	1,00	4,702	252,2	1,002	42,91	209,29
89,7%	0,90	3,705	201,6	0,805	26,65	174,95
81,0%	0,81	3,135	165,8	0,656	19,07	146,73
70,3%	0,70	2,581	149,2	0,494	12,92	136,28
50,0%	0,50	1,747	113,4	0,250	5,91	107,49
40,9%	0,41	1,401	94,2	0,167	3,80	90,40
31,4%	0,31	1,099	83,4	0,098	2,33	81,07
20,7%	0,21	0,876	66,2	0,043	1,48	64,72

RESULTS AT: **400** V

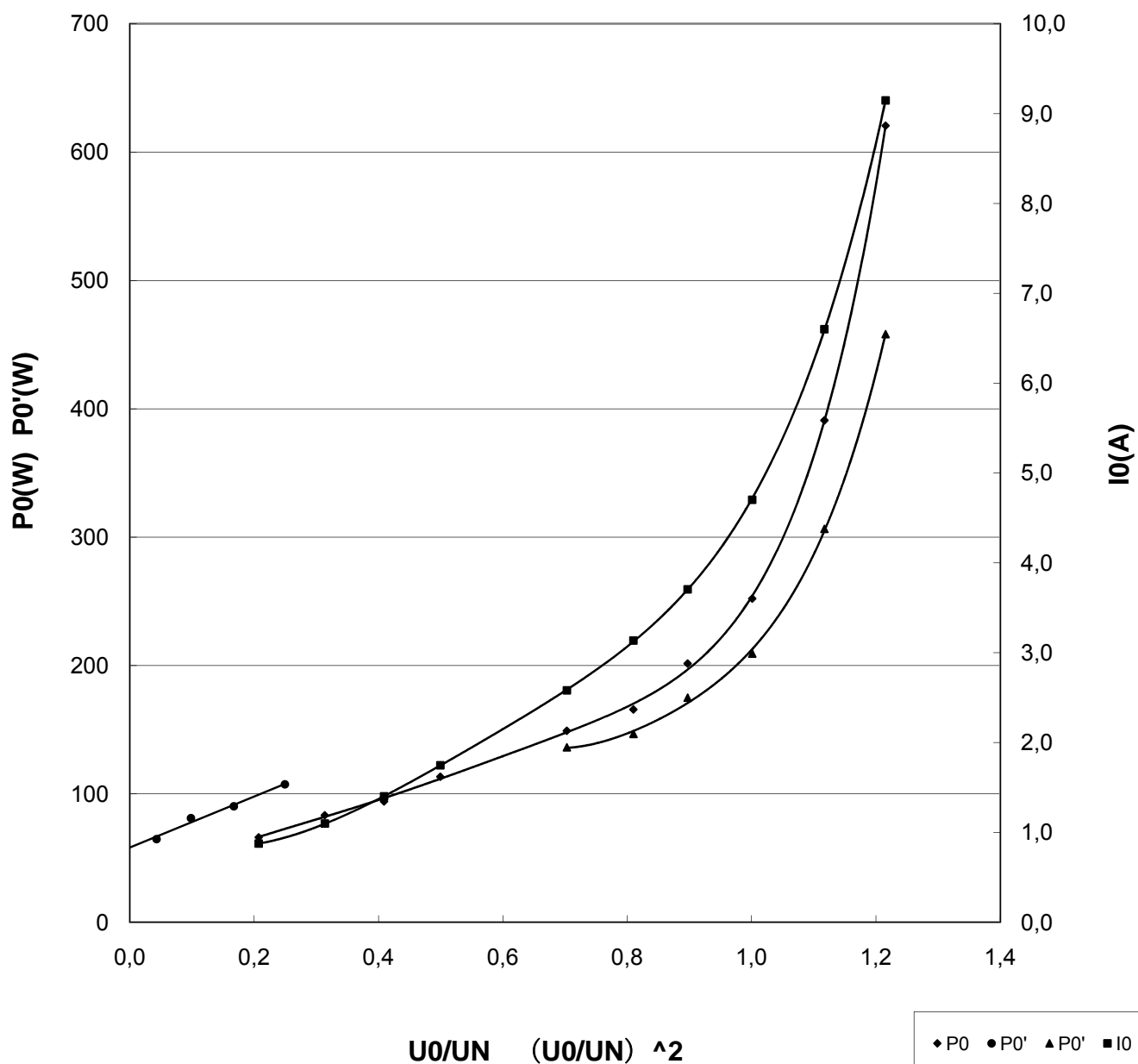
N.L.AMP	4,687	N.L.LOSS(W)	251,20	Pw(W)	58,2	Pe(W)	150,4		
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Voltage	400	V	Current	10,6	A	Frequency	50,0		HZ
Speed	1460	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	88	Kg		IP55		

No Load Curve



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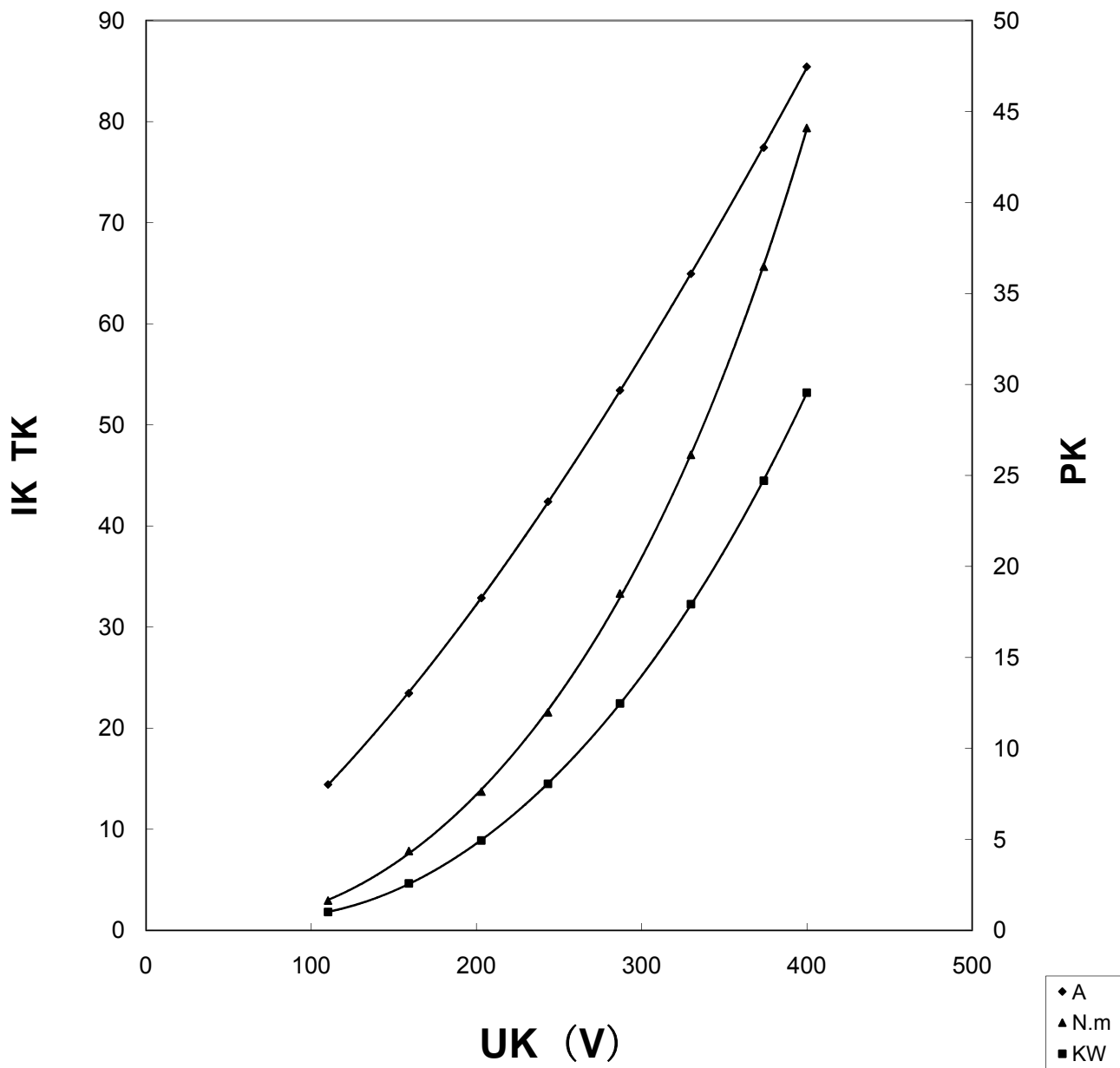
Type	K132S-4		Poles	4		Power	5,5		IE:3
Voltage	400	V	Current	10,6	A	Frequency	50,0		KW
Speed	1460	r/min	Duty	S1		Connection	Δ		HZ
Ins.class	F		Weight	88	Kg	IP55			
LOCKED ROTOR TEST									
VOL	mul.	lk1	lk2	lk3	mul.	W1	W2	mul.	Torqur (Kg.m)
399,9	1,0	0,855	0,851	0,857	100,0	0,0	295,5	100,0	8,10
373,9	1,0	3,866	3,851	3,899	20,0	-8,6	1244,1	20,0	6,70
329,8	1,0	3,251	3,221	3,272	20,0	-15,5	911,7	20,0	4,80
286,8	1,0	2,673	2,641	2,699	20,0	-21,2	644,7	20,0	3,40
243,3	1,0	2,130	2,087	2,144	20,0	-23,8	426,3	20,0	2,20
202,9	1,0	1,649	1,616	1,666	20,0	-23,7	270,7	20,0	1,40
159,1	1,0	1,179	1,153	1,186	20,0	-19,2	148,0	20,0	0,80
110,1	1,0	0,722	0,713	0,728	20,0	-11,3	61,6	20,0	0,30
data calculation of locked rotor									
UK	IK	PK	TK	LOGUK	LOGIK	LOGPK	LOGTK		
V	A	KW	N.m						
399,89	85,44	29,550	79,38	2,6019	1,9316	1,4706	1,8997		
373,89	77,44	24,710	65,66	2,5727	1,8890	1,3929	1,8173		
329,79	64,95	17,924	47,04	2,5182	1,8126	1,2534	1,6725		
286,84	53,42	12,470	33,32	2,4576	1,7277	1,0959	1,5227		
243,26	42,41	8,050	21,56	2,3861	1,6274	0,9058	1,3336		
202,95	32,88	4,940	13,72	2,3074	1,5169	0,6937	1,1374		
159,05	23,45	2,576	7,84	2,2015	1,3702	0,4109	0,8943		
110,11	14,42	1,006	2,94	2,0418	1,1590	0,0026	0,4683		
performance collection of locked rotor									
		at rated volts		at rated current		at 2.5 times rated current		at 100V	
VOLTS (V)		400		84,367		169,8		100,0	
AMPS (A)		85,5		10,3		25,8		13,03	
INPUT (KW)		29,57				3,2		0,904	
TORQUE (N.m)		79,44							

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Voltage	400	V	Current	10,6	A	Frequency	50,0	HZ	
Speed	1460	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	88	Kg		IP55		

Locked Rotor Curve



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Type	K132S-4		Poles	4		Power	5,5 KW		IE:3	
Voltage	400 V		Current	10,6 A		Frequency	50 HZ			
Speed	1460 r/min		Duty	S1		Connection	Δ			
Ins.class	F		Weight	88 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
10,28	399,9	2,129	2,125	2,142	5	379,3	863,6	5	60,50	79,8	76,1	61,0	54,0	27,4
10,59	399,8	2,116	2,125	2,136	5	375,7	863,0	5	60,40	77,8	74,3	58,4	52,2	27,4
11,30	399,7	2,131	2,140	2,142	5	375,4	869,9	5	59,60	76,9	73,4	56,2	52,4	28,6
12,01	399,8	2,118	2,124	2,128	5	374,2	862,1	5	58,80	76,4	72,9	54,9	51,8	28,1
12,28	399,5	2,124	2,126	2,144	5	377,8	863,3	5	58,20	76,1	72,6	54,9	52,0	28,1
12,56	399,7	2,114	2,123	2,129	5	371,1	863,0	5	57,80	75,8	72,3	54,5	51,6	28,3
13,27	399,9	2,131	2,126	2,135	5	378,2	863,0	5	57,30	75,5	72,0	54,5	51,6	28,1

The average of the last three | 10,640 | A | 6219 | W | 57,3 | 75,8 | 74,6 | 54,6 | 51,6 | 28,2

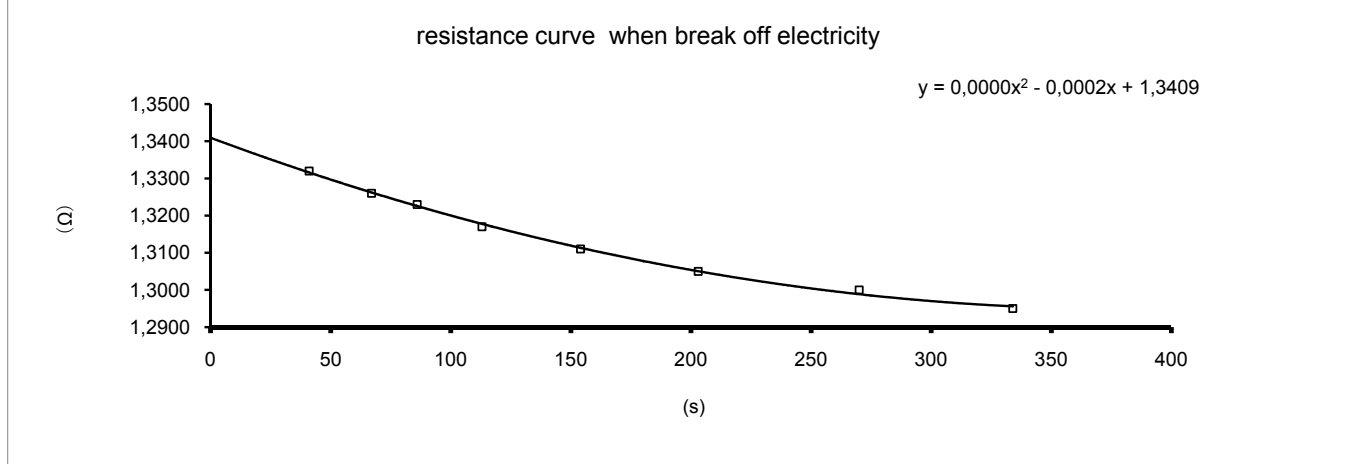
T1 : DE BEARING TEMPERATURE T4 : CORE TEMPERATRE T5: FRAME TEMPERATRE
 T2~T3 : DE WINDING TEMPERATURE T6 : AMBIENT TEMPERATURE

WINDING RESISTANCE (HOT) AT END OF TEMPERATURE RISE TEST

TIME (S)	41	67	86	113	154	203	270	334				
RESISTANC	1,3320	1,3260	1,3230	1,3170	1,3110	1,3050	1,3000	1,2950				

WINDING RESISTANCE(COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	1,11	1,11	1,107	1,10900	1,10700	25,9 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
						°C



resistance value at 0 sec (Ω)	1,3409	calculation value of temp.rising	52,87	K
30 S (Ω)	1,3340	calculation value of temp.rising	51,23	K
full load curent	10,59 A	modify value of temp. rising	51	K

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Speed	1460	r/min	Duty	S1		Connection	Δ		HZ			
Ins.class	F		Weight	88	Kg	IP55						
LOAD TEST												
V	HZ	I1	I2	I3	mul.	W1	W2	mul.	RPM	Resista nce Ω	Temper ature °C	Torqu r N.m
400,2	50,0	2,925	2,919	2,942	5	573,7	1190,4	5	1440,6	1,3198	75,5	50,58
400,3	50,0	2,546	2,548	2,556	5	483,5	1037,4	5	1449,1	1,3224	76,1	43,81
400,2	50,0	2,130	2,125	2,146	5	377,9	865,5	5	1459,6	1,3241	76,5	35,9
400,4	50,0	1,771	1,775	1,790	5	276,0	717,4	5	1467,7	1,3237	76,4	28,54
399,9	50,0	1,459	1,450	1,459	5	172,4	575,0	5	1475,3	1,3215	75,9	21,16
400,1	50,0	1,187	1,185	1,198	5	68,4	446,3	5	1482,3	1,3186	75,2	14,03
400,4	50,0	1,051	1,055	1,061	5	0,0	369,6	5	1486,5	1,3152	74,4	9,56
400,3	50,0	2,370	2,372	2,395	2,0	-327,8	595,0	2,0	1498,4	1,3105	73,3	1,245
399,9	50,0	2,339	2,346	2,356	2,0	-393,9	522,1	2,0	1500,0	1,2952	69,7	0,0
slope A=		0,06313	intercept B=		-15,89	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	
125,0	6875	13,04	7798,5	339,1	3,422	250,1	123,5	921,3	45,4	88,2	0,862	
110,0	6050	11,57	6814,1	266,2	2,958	189,2	95,0	759,0	39,8	88,8	0,851	
100,0	5500	10,60	6164,4	223,5	2,653	153,6	78,1	663,7	36,1	89,2	0,840	
75,0	4125	8,37	4607,3	141,2	1,998	86,2	43,3	479,4	26,9	89,5	0,790	
50,0	2750	6,56	3106,3	85,7	1,398	40,1	19,0	353,4	17,8	88,5	0,684	
25,0	1375	5,02	1643,9	50,2	0,831	12,0	4,7	275,5	8,8	83,6	0,472	

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Speed	1460	r/min	Duty	S1		Connection	Δ		HZ	
Ins.class	F		Weight	88	Kg			IP55		

Load Curve

