

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

							IE3
Type	K225S-4		Poles	4	Power	37,0	kW
Voltage	400	V	Current	66,9	A	Frequency	50 Hz
Speed	1482	r/min	Duty	S1	Connection	△	
Ins.class	F		Weight	380	kg	IP55	
MAJOR CONTENTS				TEST VALUE			
95,0	°C PHASE RESISTANCE OF WII		Ω	0,1594			
NO LOAD CURRENT			A	28,690			
NO LOAD INPUT			W	856,25			
CORE LOSS(Pfe)			W	508,18			
WINDAGE FRICTION LOSS(Pfw)			W	232,47			
STATOR WINDING LOSS(Pcu1)			W	656,60			
ROTOR WINDING LOSS(Pcu2)			W	467,76			
STRAY LOAD LOSS(Ps)			W	401,06			
LOCKED ROTOR CURRENT			A	470,033			
LOCKED ROTOR INPUT @ FULL LOAD			W	117604			
LOCKED ROTOR TORQUE			N.m	460,2			
PULL OUT TORQUE			N.m	730,2			
LOCKED ROTOR CURRENT/RATED CURF			P.U	7,03			
LOCKED ROTOR TORQUE/RATED TORQL			P.U	1,93			
PULL OUT TORQUE/RATED TORQUE			P.U	3,06			
FULL LOAD TORQUE			N.m	238,6			
FULL LOAD CURRENT			A	66,9			
FULL LOAD SLIP			%	1,228			
INPUT @ FULL LOAD			kW	39,271			
FULL LOAD SPEED			r/min	1481,6			
EFFICIENCY @ FULL LOAD			%	94,22			
EFFICIENCY @ 75% LOAD			%	94,46			
POWER FACTOR @ FULL LOAD				0,847			
STATOR WINDING TEMPERATURE RISE			K	43			
D.E. BEARINGS TEMPERATURE BY PT10			°C	36,3			
STATOR WINDING TEMPERATURE			°C	62,3			
High voltage test			V	1800	Imin		
Insulation resistance			MΩ	500			
NOISE (LW)			dB(A)	80			
VIBRATION			mm/s	1,7			

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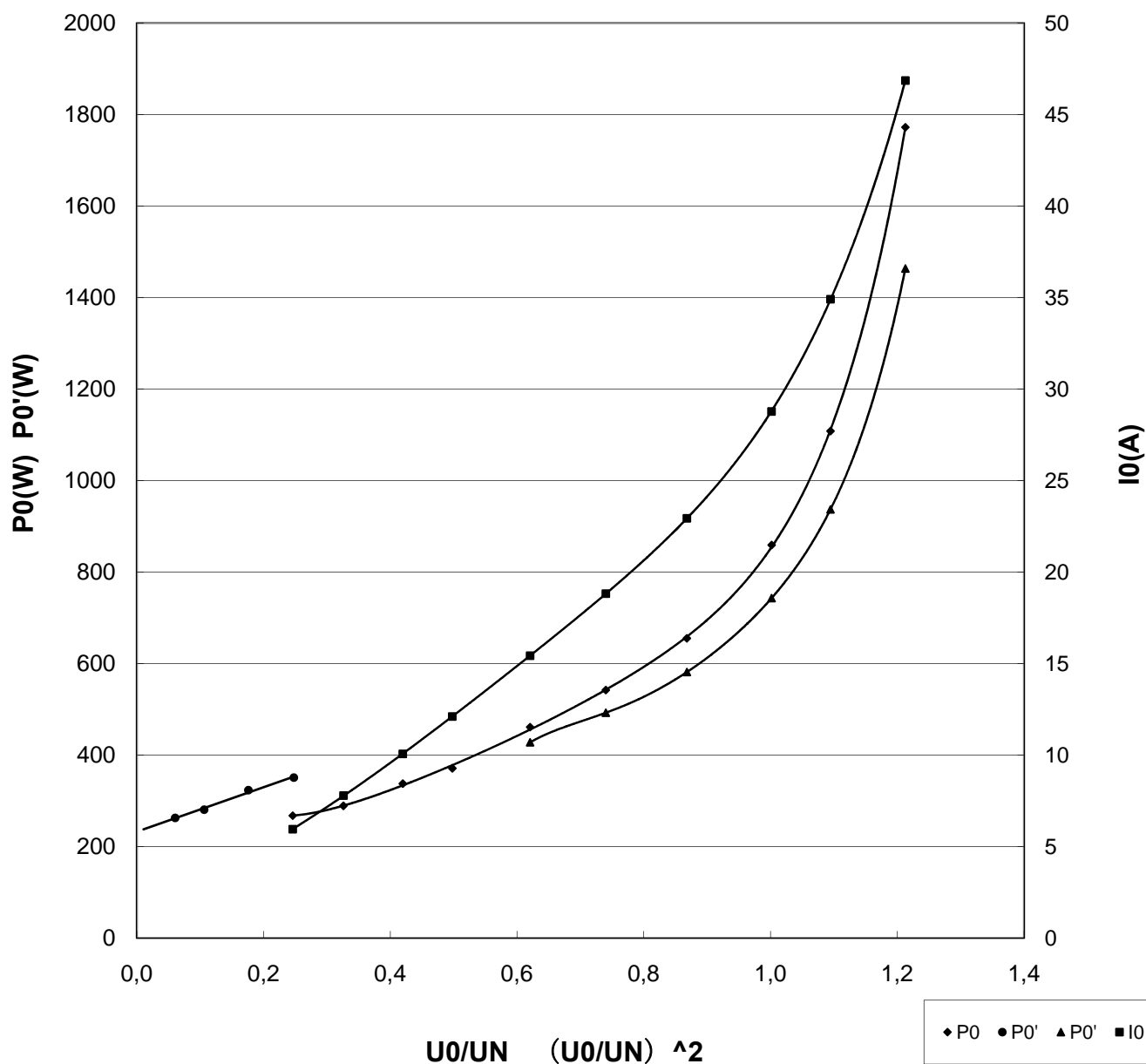
Type	K225S-4		Poles	4		Power	37,0 kW		IE:3		
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Ins.class	F		Weight	380	kg	IP55					
NO LOAD TEST											
VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
485,1	1	50	4,665	4,657	4,733	10	-971,1	1148,3	10	56,2	0,09380
437,8	1	50	3,475	3,471	3,525	10	-656,9	767,7	10	56,0	0,09374
400,6	1	50	2,867	2,862	2,901	10	-495,0	580,9	10	55,6	0,09361
347,2	1	50	2,289	2,280	2,311	10	-339,0	404,5	10	55,4	0,09354
296,0	1	50	1,879	1,871	1,895	10	-233,0	287,2	10	55,0	0,09341
248,2	1	50	1,542	1,533	1,554	10	-155,4	201,5	10	54,6	0,09329
199,2	1	50	2,401	2,401	2,461	5	-183,4	257,6	5	53,7	0,09300
167,9	1	50	1,995	2,000	2,044	5	-120,4	187,9	5	53,4	0,09290
130,4	1	50	1,543	1,550	1,578	5	-63,1	120,9	5	53,2	0,09283
98,4	1	50	1,182	1,184	1,205	5	-25,0	78,5	5	52,7	0,09267
data calculation of no load											
V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'					
121,3%	1,21	46,850	1772,0	1,470	308,83	1463,17					
109,4%	1,09	34,903	1108,0	1,198	171,29	936,71					
100,2%	1,00	28,767	859,0	1,003	116,19	742,81					
86,8%	0,87	22,933	655,0	0,753	73,80	581,20					
74,0%	0,74	18,817	542,0	0,548	49,61	492,39					
62,1%	0,62	15,430	461,0	0,385	33,31	427,69					
49,8%	0,50	12,105	371,0	0,248	20,44	350,56					
42,0%	0,42	10,065	337,5	0,176	14,12	323,38					
32,6%	0,33	7,785	289,0	0,106	8,44	280,56					
24,6%	0,25	5,952	267,5	0,061	4,92	262,58					
RESULTS AT: 400 V											
N.L.AMP	28,69	N.L.LOSS(W)	856,25	Pw(W)	232,5	Pe(W)	508,2				

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Speed	1482	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	380	kg		IP55		

No Load Curve



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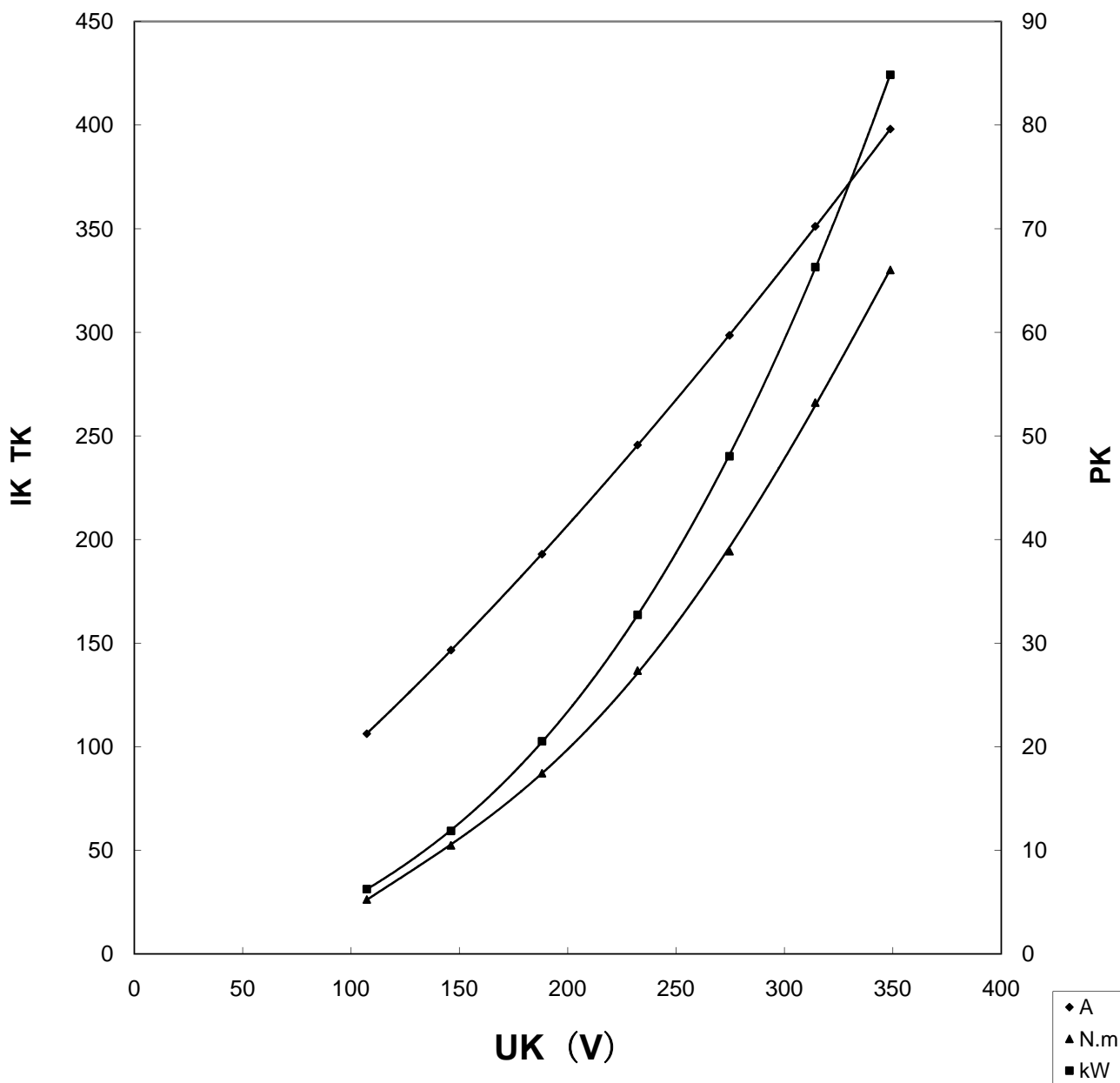
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Speed	1482	r/min	Duty	S1		Connection	Δ		Hz
Ins.class	F		Weight	380	kg			IP55	
LOCKED ROTOR TEST									
VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu (kg.m)
348,8	1,0	1,985	1,927	2,060	200,0	-89,0	513,3	200,0	33,68
314,2	1,0	1,757	1,692	1,818	200,0	-73,3	404,8	200,0	27,15
274,6	1,0	3,011	2,859	3,087	100,0	-115,5	595,9	100,0	19,83
232,2	1,0	2,494	2,342	2,534	100,0	-84,3	411,7	100,0	13,95
188,1	1,0	1,962	1,834	1,992	100,0	-54,7	260,0	100,0	8,90
146,1	1,0	2,987	2,791	3,022	50,0	-69,2	306,9	50,0	5,35
107,3	1,0	2,163	2,028	2,188	50,0	-37,2	162,5	50,0	2,68
data calculation of locked rotor									
Uk	IK	PK	TK		LOGUk	LOGIk	LOGPk	LOGTk	
V	A	kW	N.m						
348,84	398,05	84,860	330,06		2,5426	2,5999	1,9287	2,5186	
314,21	351,12	66,300	266,07		2,4972	2,5455	1,8215	2,4250	
274,63	298,52	48,040	194,33		2,4388	2,4750	1,6816	2,2885	
232,21	245,64	32,740	136,71		2,3659	2,3903	1,5151	2,1358	
188,11	192,95	20,530	87,22		2,2744	2,2854	1,3124	1,9406	
146,11	146,66	11,885	52,43		2,1647	2,1663	1,0750	1,7196	
107,26	106,32	6,265	26,26		2,0305	2,0266	0,7969	1,4194	
performance collection of locked rotor									
	at rated volts		at rated current		at 2.5 times rated current		at 100V		
VOLTS (V)	400		71,426		161,5		100,0		
AMPS (A)	470,0		66,1		165,3		96,52		
INPUT (kW)	117,60				15,0		5,200		
TORQUE (N.m)	460,24								

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Speed	1482 r/min	Duty	S1	Connection	Δ	Hz
Ins.class	F	Weight	380 kg			IP55

Locked Rotor Curve



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Speed	1482	r/min	Duty	S1		Connection	Δ			
Ins.class	F		Weight	380	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
12,30	400,3	1,335	1,338	1,342	50	251,8	540,2	50	38,2	—	62,0	64,1	—	—	—	—	—	—	30,7	—	11,2
12,59	400,3	1,332	1,335	1,339	50	250,9	538,9	50	37,7	—	61,5	63,6	—	—	—	—	—	—	30,5	—	11,3
13,30	400,4	1,318	1,322	1,325	50	246,9	533,2	50	37,4	—	61,0	63,1	—	—	—	—	—	—	30,3	—	11,0
14,00	400,3	1,333	1,336	1,340	50	251,4	539,6	50	36,1	—	60,2	62,4	—	—	—	—	—	—	29,7	—	10,4
14,28	400,4	1,330	1,333	1,338	50	250,7	538,7	50	36,3	—	60,1	62,3	—	—	—	—	—	—	29,7	—	11,0
The average of the last three		66,521			A	39341,7		W	36,3	—	60,1	62,3	—	—	—	—	—	—	29,7	—	10,8

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)	55	101	131	154	173	189	207	233		
RESISTANC	0,09273	0,09223	0,09196	0,09173	0,09158	0,09145	0,09130	0,09113		

WINDING RESISTANCE(COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0,07828	0,07828	0,07836	0,07831	0,07828	8,1 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
						°C

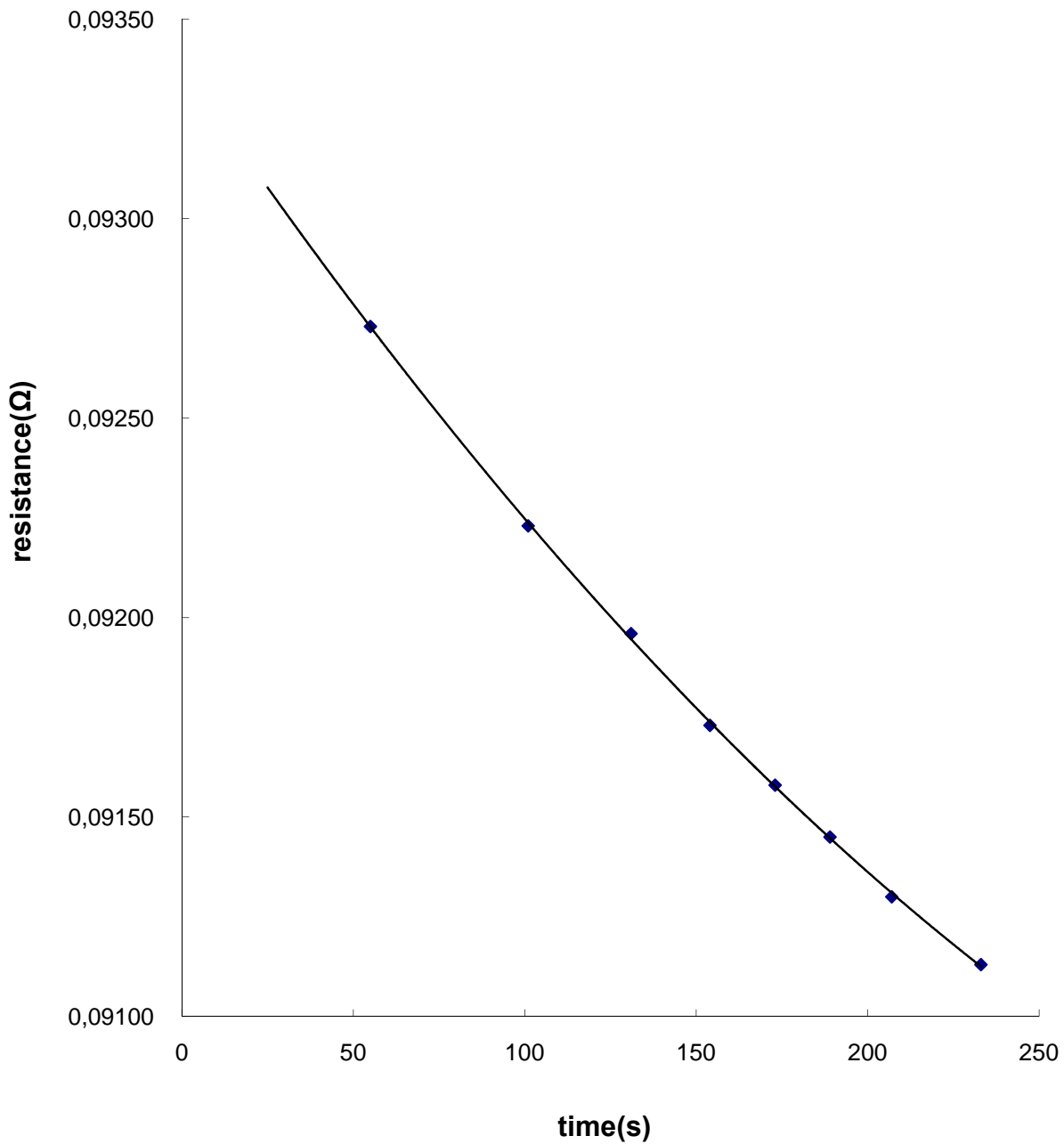
resistance value at 0 sec (Ω)	0,093387	calculation value of temp.rising	44,22	K
30 S (Ω)	0,092976	calculation value of temp.rising	42,94	K
full load curent	66,89 A	modify value of temp. rising	43,41	K

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Voltage	400 V	Current	66,9 A	Frequency	50,0	kW
Speed	1482 r/min	Duty	S1	Connection	Δ	Hz
Ins.class	F	Weight	380 kg		IP55	

RESISTANCE CURVE



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Speed	1482	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	380	kg		IP55		

LOAD CURVE

