



VALIADIS S.A.

HELLENIC MOTORS

Type Test Report three phase squirrel-cage motors

Name plate data

Type : KHV 400-4	Output : 315 kW	Motor No. :	Duty type : S1
Voltage : 3000 V	Conn. : Y	Frequency : 50 Hz	Cosφ : 0.85
Current : 75 A	Speed : 1485 rpm	Eff. : 94.6 %	

Stator winding resistance measurement (cold)

Connection : Y	$R_{u1-v1} : 0.41420 \Omega$		
Winding temp: 35,5 °C	$R_{v1-w1} : 0.41350 \Omega$	$R_{av} = 0.41373 \Omega$	Asymmetry : 0.11 %
Room temp: 35,5 °C	$R_{w1-ul} : 0.41350 \Omega$		

No-load test

$$R_{begin} = 0.46180 \Omega \quad R_{end} = 0.46150 \Omega$$

Losses						
Uo	Io	Po	cosφo	Vcu1	Vfe	Vw
V	A	W		W	W	W
3550	27.93	11844	0.069	540	7702	3602
3286	25.00	10121	0.071	433	6086	3602
3000	22.22	8712	0.075	342	4768	3602
2683	19.35	7517	0.084	259	3655	3602
2324	16.35	6451	0.098	185	2663	3602
1897	13.14	5462	0.127	119	1741	3602
1342	9.44	4533	0.207	62	869	3602
949	7.02	4074	0.353	34	438	3602

Sound pressure level in dB (A) (at 1 m): 82.3

Sound power level in dB(A): 96.4

Vibration level (mm/s): x=1.5 y=1.3 z=1.0

Temperature rise test

Voltage : 3000 V, Frequency : 50 Hz, Current : 75.9 A, connection : Y

According to IEC 34-1	Time	Room temp. °C	Rwdg Ω	Wdg. temp. °C	Wdg. temp. rise(K)	U V	I A	P W	*frame °C
Begin	18:00	35.5	0.41420	35.8	-----				35.6
	20:00	32.0				3000	76.3	348000	59.0
	20:30	32.0				3000	76.0	340800	62.0
	21:00	32.0				3000	75.8	343200	65.0
	21:30	32.0				3000	76.2	344400	65.0
	22:00	32.0				3000	75.8	343200	65.0
End		32.0	0.50170	93.0	61.0	*bearing:DE=70.3°C, NDE= 65.5°C			

*measured Temperature (°C) with ETD, ETD= embedded temperature detector



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Load test

Frequency: 50 Hz

Connection: Y

Rav= 0.51 Ω

QAV= 98,43941 °C

P2	U	I	P1	cosφ	n	s	Vfe	Vcu1	Ve	Vcu2	Vw	Vv	P2	n
Approx. %	V	A	kW		Min ⁻¹	%	W	W	W	W	W	W	kW	%
25	3000	29.98	88.072	0.565	1497	0.20	4768	639	135	163	3602	9307	78.765	89.4
50	3000	43.83	168.486	0.740	1495	0.36	4768	1366	475	589	3602	10801	157.685	93.6
75	3000	57.77	246.399	0.831	1492	0.56	4768	2374	948	1362	3602	13053	236.345	94.8
100	3000	73.97	331.712	0.863	1488	0.81	4768	3891	1659	2614	3602	16534	315.178	95.0
125	3000	94.57	416.326	0.847	1483	1.12	4768	6360	2815	4530	3602	22076	394.250	94.7
150	3000	121.72	504.142	0.797	1477	1.50	4768	10537	4772	7346	3602	31026	473.116	93.8

Locked rotor test

U	I	P1	cosφ	T
V	A	kW		Nm
3000	458.51	431.001	0.181	2036.3
2500	382.76	300.499	0.181	1419.5
2000	306.90	193.102	0.182	912.2
1500	230.83	109.065	0.182	515.6
1000	154.48	48.633	0.182	231.3
500	77.78	12.050	0.179	60.6

Total/speed and current/speed test

n	T	I	n	T	I	n	T	I	n	T	I
Min ⁻¹	Nm	A	Min ⁻¹	Nm	A	Min ⁻¹	Nm	A	Min ⁻¹	Nm	A
1500	0	11.0	1465	4576	185.3	1429	6356	292.9	1339	5813	361.3
1279	5172	369.0	1219	4551	376.9	1159	4030	381.9	1099	3634	385.3
1039	3353	388.0	919	3022	393.9	799	2812	401.7	679	2600	411.3
559	2395	421.2	439	2267	429.6	319	2221	436.1	199	2074	442.9
101	2068	452.7	0	2036	458.5						

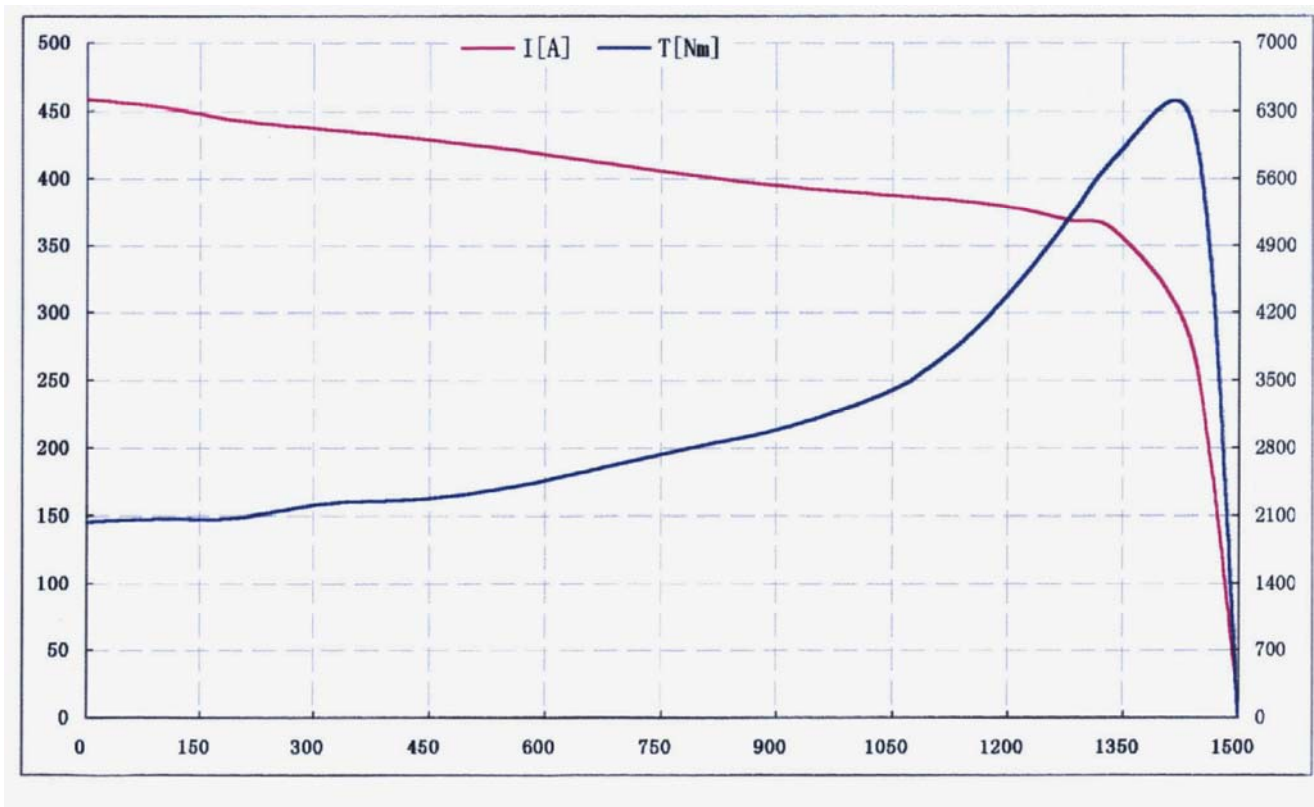


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Torque/speed and Current/speed Test



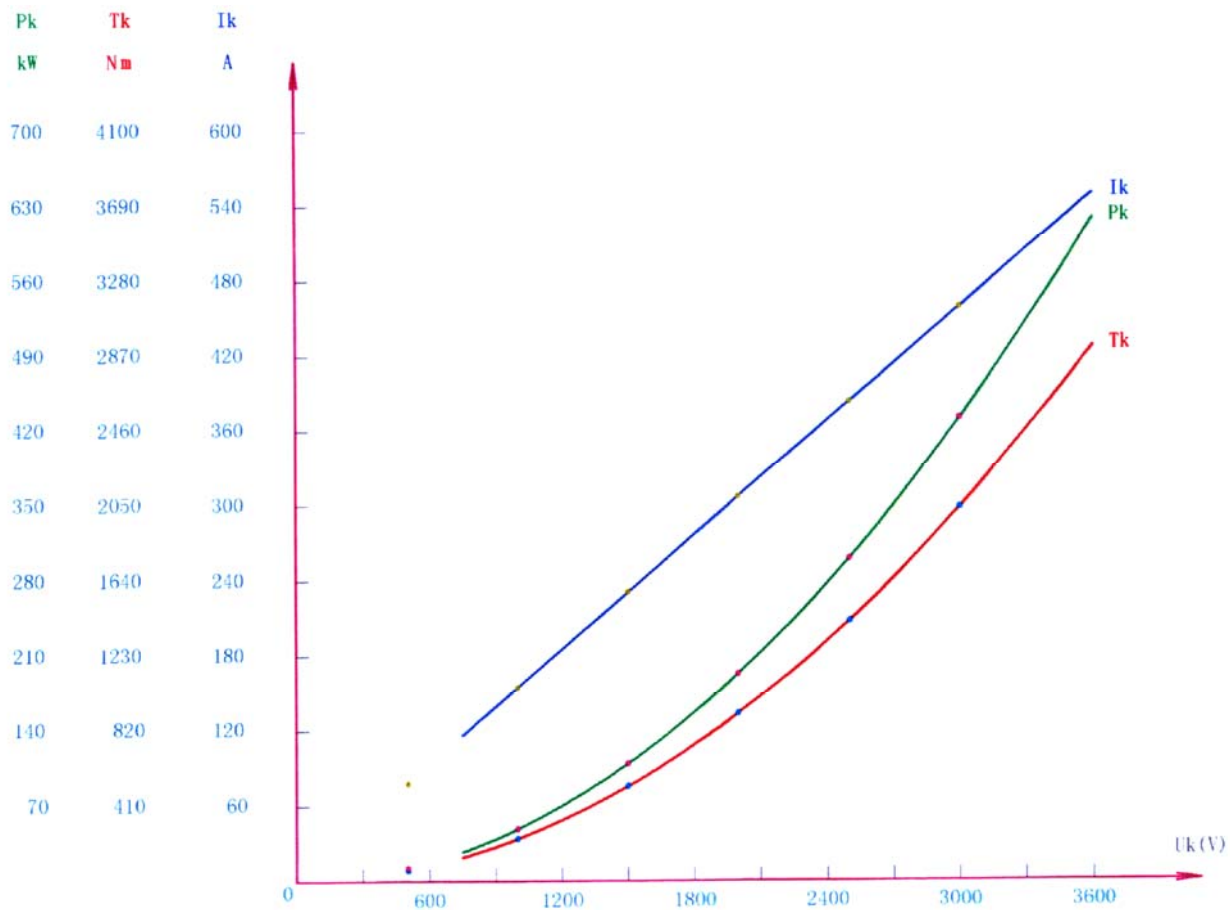


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Locked Rotor Characteristic Curve



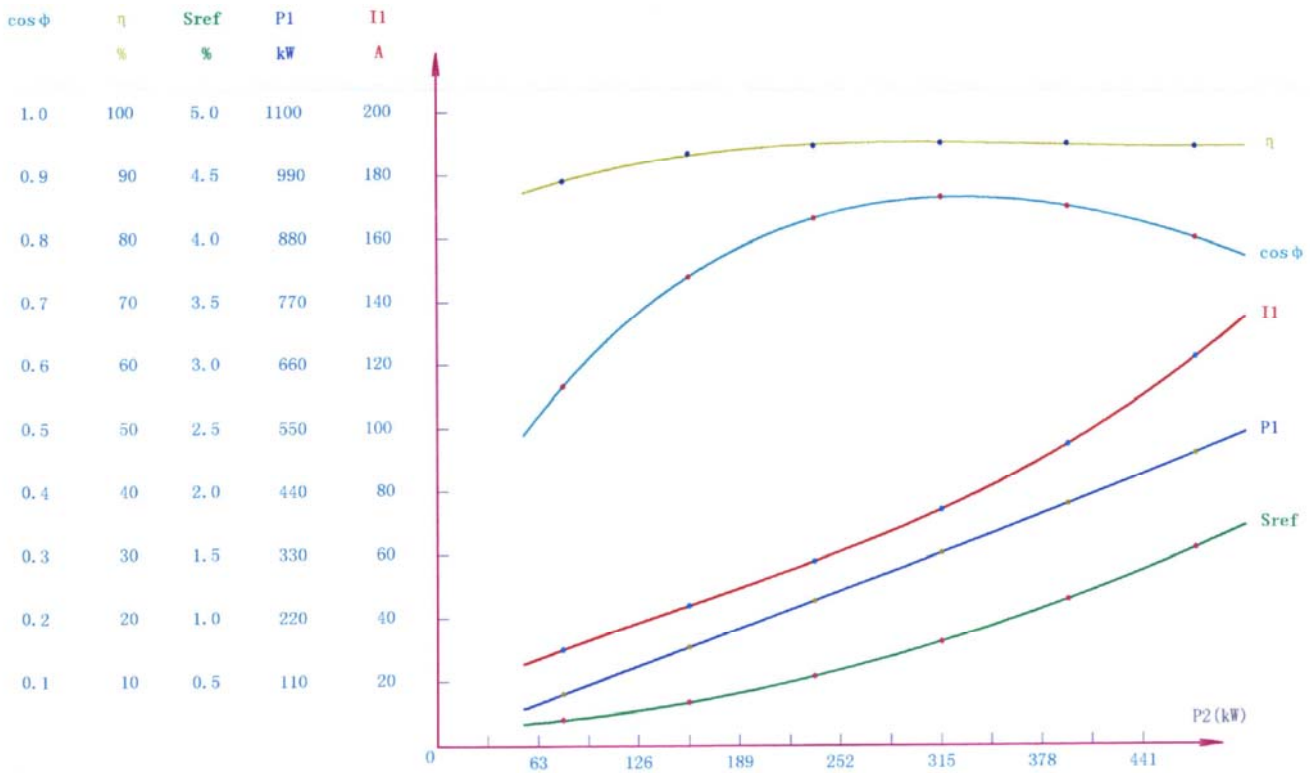


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Load Characteristic Curve





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No Load Characteristic Curve

