



# VALIADIS S.A.

## HELLENIC MOTORS

### Type Test Report three phase squirrel-cage motors

#### Name plate data

Type : KHV 400-4	Output : 355 kW	Motor No. :	Duty type : S1
Voltage : 3000 V	Conn. : Y	Frequency : 50 Hz	Cosφ : 0.85
Current : 84.7 A	Speed : 1485 rpm	Eff. : 94.8 %	

#### Stator winding resistance measurement (cold)

Connection : Y	$R_{u1-v1} : 0.36680 \Omega$		
Winding temp: 35,0 °C	$R_{v1-w1} : 0.36630 \Omega$	$R_{av} = 0.36650 \Omega$	Asymmetry : 0.08 %
Room temp: 35,0 °C	$R_{w1-ul} : 0.36640 \Omega$		

#### No-load test

$$R_{begin} = 0.44480 \Omega \quad R_{end} = 0.44430 \Omega$$

Losses						
Uo	Io	Po	cosφo	Vcu1	Vfe	Vw
V	A	W		W	W	W
3550	33.07	16637	0.082	729	10418	5490
3286	29.26	13072	0.078	571	7012	5490
3000	25.28	10550	0.080	426	4635	5490
2683	21.70	8813	0.087	314	3010	5490
2324	18.43	7617	0.103	226	1901	5490
1897	14.88	6764	0.138	148	1127	5490
1342	10.46	6115	0.252	73	553	5490
949	8.06	5821	0.439	43	287	5490

Sound pressure level in dB (A) (at 1 m): 82.7

Sound power level in dB(A): 96.7

Vibration level (mm/s): x=0.6 y=0.6 z=0.5

#### Temperature rise test

Voltage : 3000 V, Frequency : 50 Hz, Current : 84.6 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	17:21	35.0	0.36680	35.2	-----				35.1
	19:00	40.0				3000	84.7	427200	75.0
	19:30	39.5				3000	84.3	427200	72.0
	20:00	40.0				3000	84.8	426000	71.0
	20:30	40.0				3000	84.5	427200	70.0
	21:00	40.0				3000	84.7	427200	70.0
	21:30	40.0				3000	84.5	427200	70.0
End		40.0	0.47690	116.3	76.3	*bearing:DE=93°C, NDE= 80.8°C			

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



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### Load test

Frequency: 50 Hz

Connection: Y

Rav= 0.4769 Ω

QAV= 116,3315 °C

P2	U	I	P1	cosφ	n	s	Vfe	Vcu1	Ve	Vcu2	Vw	Vv	P2	n
Approx. %	V	A	kW		Min <sup>-1</sup>	%	W	W	W	W	W	W	kW	%
25	3000	33.38	100.064	0.577	1496	0.28	4635	703	144	261	5490	11233	88.831	88.8
50	3000	47.25	190.507	0.776	1493	0.44	4635	1409	483	820	5490	12836	177.670	93.3
75	3000	63.63	281.994	0.853	1490	0.64	4635	2556	1034	1753	5490	15467	266.527	94.5
100	3000	82.59	374.888	0.874	1487	0.85	4635	4305	1874	3124	5490	19428	355.460	94.8
125	3000	104.18	469.553	0.867	1484	1.09	4635	6850	3097	4990	5490	25062	444.491	94.7
150	3000	128.46	566.352	0.848	1480	1.34	4635	10416	4810	7400	5490	32751	533.602	94.2

### Locked rotor test

U	I	P1	cosφ	T
V	A	kW		Nm
3000	473.21	524.382	0.213	2192.5
2500	395.44	366.127	0.214	1530.6
2000	317.48	236.030	0.215	986.9
1500	239.18	134.054	0.216	560.7
1000	160.43	60.160	0.216	251.3
500	81.10	14.310	0.204	58.2

### Total/speed and current/speed test

n	T	I	n	T	I	n	T	I	n	T	I
Min <sup>-1</sup>	Nm	A	Min <sup>-1</sup>	Nm	A	Min <sup>-1</sup>	Nm	A	Min <sup>-1</sup>	Nm	A
1500	0	13.4	1461	5165	213.0	1421	6891	332.7	1331	6047	380.1
1272	5371	400.7	1212	4730	407.2	1153	4203	410.2	1093	3805	411.6
1034	3517	412.8	914	3157	417.1	795	2925	424.8	676	2730	434.2
557	2554	442.9	438	2399	449.2	318	2275	453.6	199	2224	459.3
101	2199	468.8	0	2192	473.2						



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Motor No. :

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Duty type : S1

Voltage : 3000 V

Conn. : Y

Frequency : 50 Hz

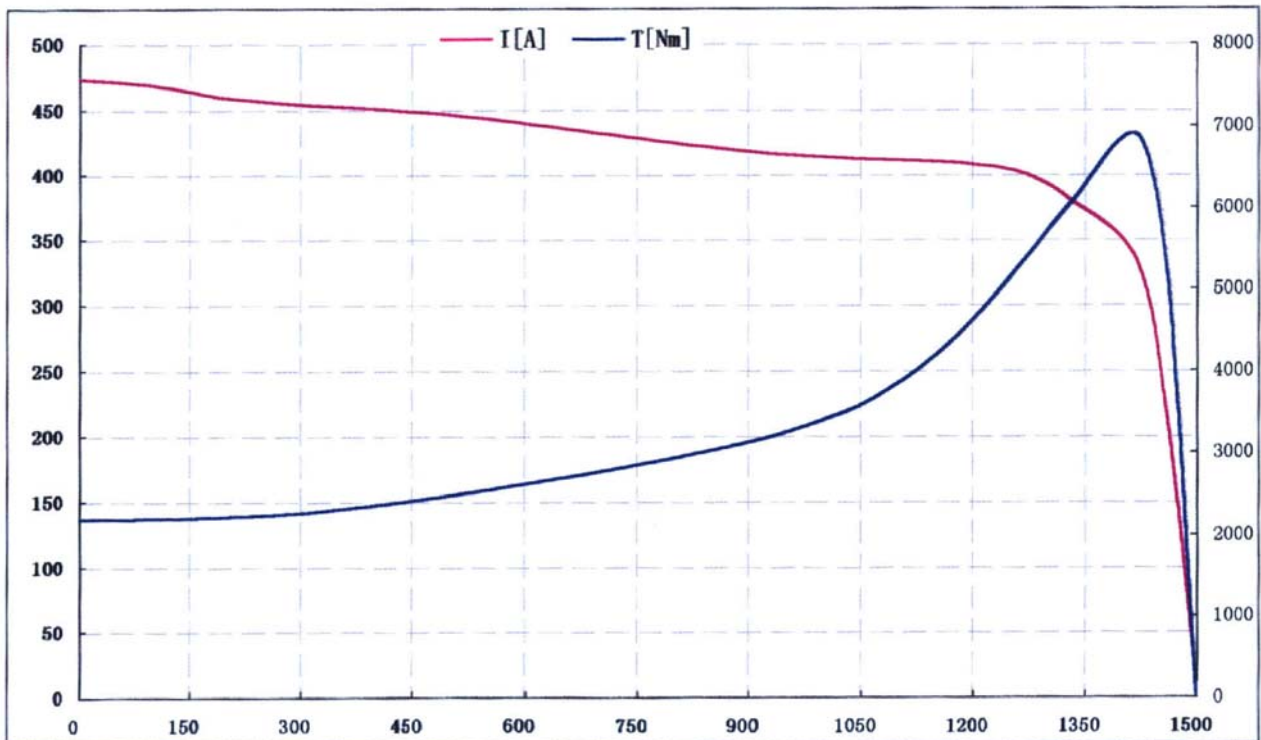
Cos $\phi$  : 0.85

Current : 84.7 A

Speed : 1485 rpm

Eff. : 94.8 %

### Torque/speed and Current/speed Test





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## HELLENIC MOTORS

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Voltage : 3000 V

Current : 84.7 A

Output : 355 kW

Conn. : Y

Speed : 1485 rpm

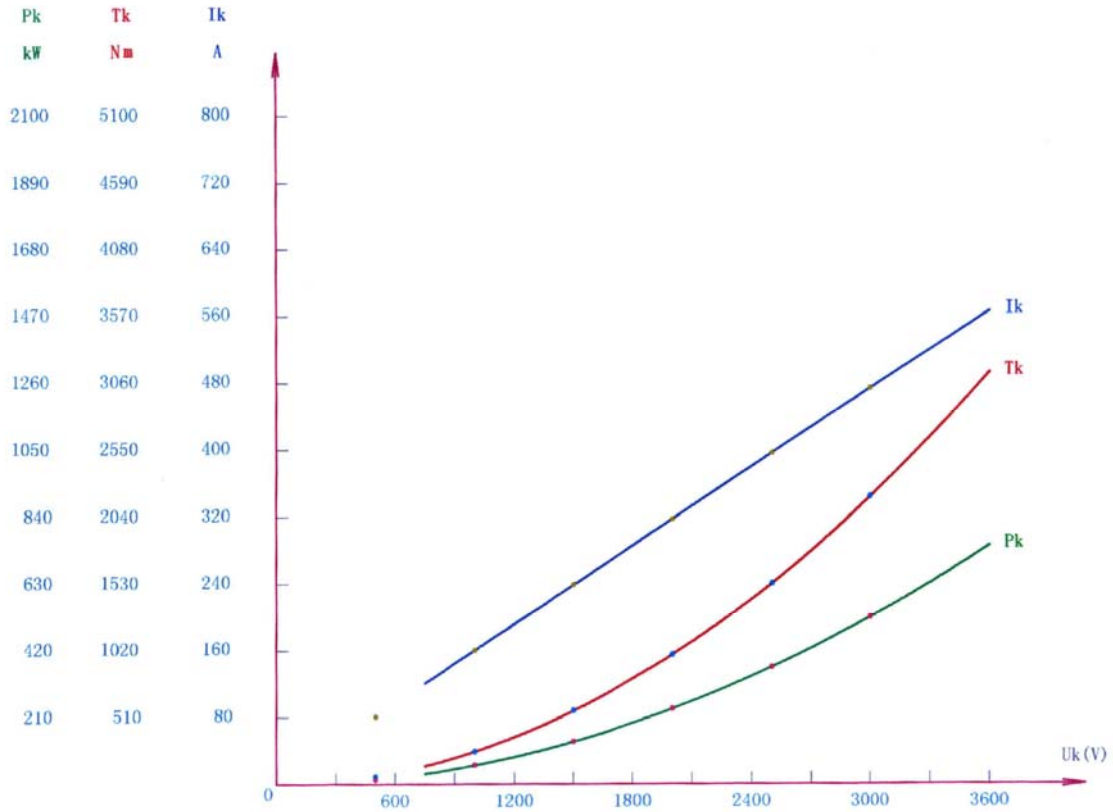
Motor No. :

Duty type : S1

Frequency : 50 Hz    Cos $\phi$  : 0.85

Eff. : 94.8 %

### Locked Rotor Characteristic Curve



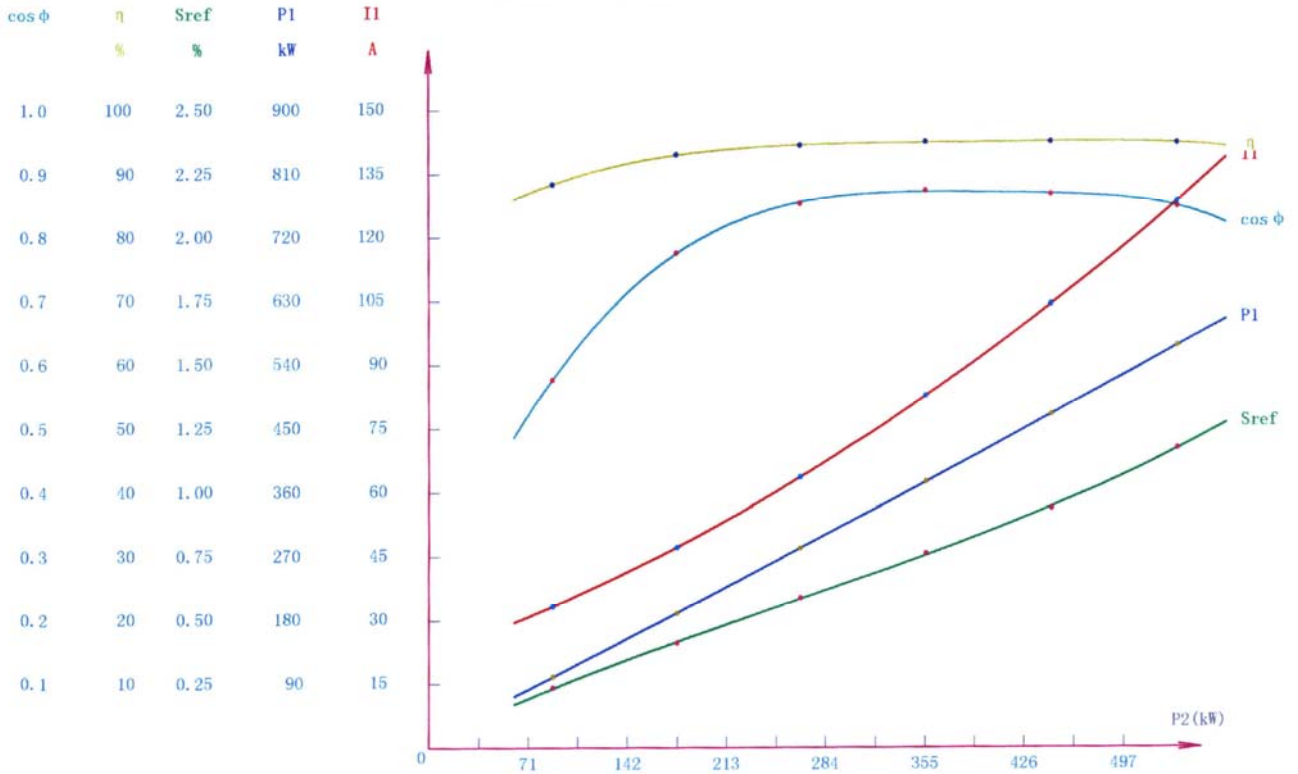


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### Load Characteristic Curve





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### No Load Characteristic Curve

