



ESTABLISHED 1927

VALIADIS

HELLENIC MOTORS

Quality Assurance Certificate EN ISO 9001:2015
Certificate Reg. No. 041130055



Type Test Report three phase squirrel-cage motors

Winding calc card

Type : K 400M-2	Motor No. :
Output : 500 kW	Duty type : S1
Voltage : 380 V	Conn. : Δ
Current : 891 A	Speed : 2985 rpm
	Frequency : 50 Hz
	Eff. : 95.8 %
	Cosφ : 0.89

Statorwinding resistance measurement (cold)

Connection : Δ	$R_{u1-v1} : 0.002240 \Omega$
Winding temp: 17.1 °C	$R_{v1-w1} : 0.002240 \Omega$ $R_{av} = 0.002240 \Omega$
Room temp: 17.1 °C	$R_{w1-u1} : 0.002240 \Omega$

No-load test

$R_{begin} = 0.002720 \Omega$ $R_{end} = 0.002702 \Omega$

				Losses		
U_o	I_o	P_o	$\cos\phi_o$	V_{cu1}	V_{fe}	V_w
V	A	W		W	W	W
450	414.96	26641	0.082	698	20928	5015
415	271.91	16594	0.085	300	11279	5015
380	191.87	11538	0.091	149	6374	5015
340	143.06	8962	0.106	83	3864	5015
295	113.77	7964	0.137	52	2897	5015
240	90.70	7132	0.189	33	2084	5015
170	67.15	6250	0.316	18	1217	5015
120	54.99	5661	0.495	12	634	5015

Sound pressure level in dB (A) (at 1 m): 92.2

Vibration level (mm/s): x = 1.4 y = 1.5 z = 1.6

Temperature rise test

Voltage : 380 V, Frequency : 50 Hz, Current : 102.7 A, connection : Δ

According to IEC 34-1	Time	Room temp. °C	R_{wdg} Ω	Wdg. temp. by R_{wdg}	Wdg. temp. rise(K)	Temperature (°C)with ETD*				
						I (A)	P (Kw)	Bearing DE	Bearing NDE	Winding
Begin	10:45	17.1	0.002240	17.1						17.1
	13:10	17.6				869.87	512.80			78.0
	13:40	17.8				894.86	529.2			82.0
	14:10	18.0				898.16	542.0			85.5
	14:40	18.2				897.20	530.0			87.0
	15:10	18.4				889.37	526.8			88.0
	15:40	18.5				891.02	529.6			88.0
End		18.5	0.002910	92.5	74.0			56.0	52.5	
Temperature Rise(100% Rated Load) via Resistance Measuring Method					5484.2					

* ETD= embedded temperature detector



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Load test

Frequency: 50 Hz

 $T_{\text{wdg,begin}} = 95.2 \text{ }^{\circ}\text{C}$ $T_{\text{wdg,end}} = 94.1 \text{ }^{\circ}\text{C}$ Connection: Δ $R_{\text{begin}} = 0.002 \text{ } \Omega$ $R_{\text{end}} = 0.006146 \text{ } \Omega$

P2	U	I	P1	cos ϕ	n	s	Vfe	Vcu1	Ve	Vcu2	Vw	Vv	P2	n
Approx. %	V	A	kW		Min ⁻¹	%	W	W	W	W	W	W	kW	%
25	380	347.70	137.432	0.601	2995.2	0.16	6374	532	308	203	5015	12432	125.0	90.95
50	380	512.44	263.860	0.782	2994.3	0.19	6374	1155	828	488	5015	13860	250.0	94.75
75	380	691.88	391.190	0.859	2991.6	0.28	6374	2105	1621	1075	5015	16190	375.0	95.86
100	380	884.09	519.616	0.893	2988.0	0.40	6374	3438	2732	2057	5015	19616	500.0	96.22
125	380	1087.18	649.201	0.907	2983.8	0.54	6374	5199	4201	3412	5015	24201	625.0	96.27
150	380	1299.22	779.871	0.912	2980.5	0.65	6374	7424	6057	5001	5015	29871	750.0	96.17

 $T_s/T_n = 1.54$ $I_s/I_n = 7.89$

Locked rotor test

U	I	P1	cos ϕ	T
V	A	kW		Nm
380	7033.3	1856.924	0.401	2457
350	6443.8	1558.446	0.399	2062
300	5467.8	1122.197	0.395	1485
250	4502.3	760.971	0.390	1007
200	3550.0	473.042	0.385	626
100	1696.5	110.165	0.375	151



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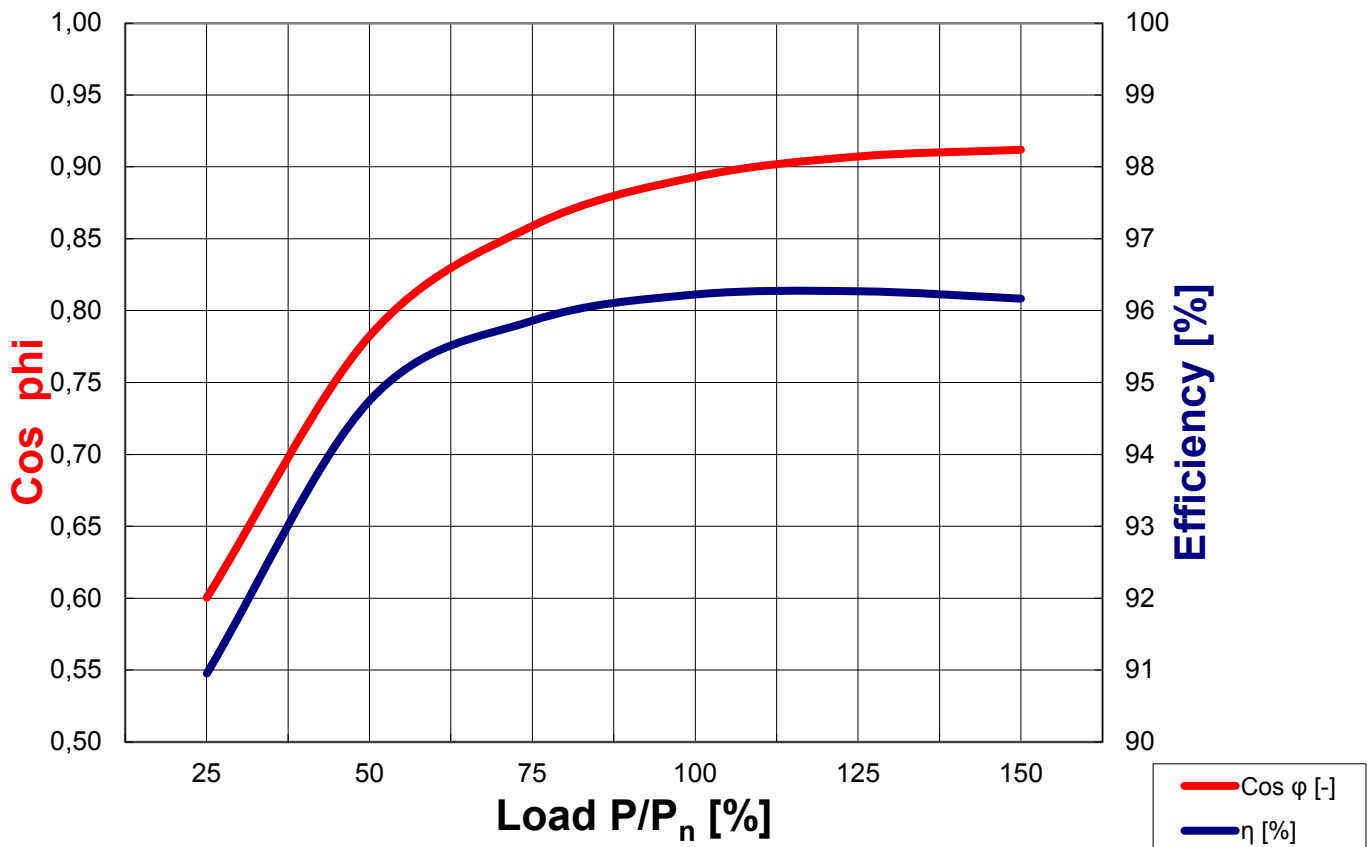
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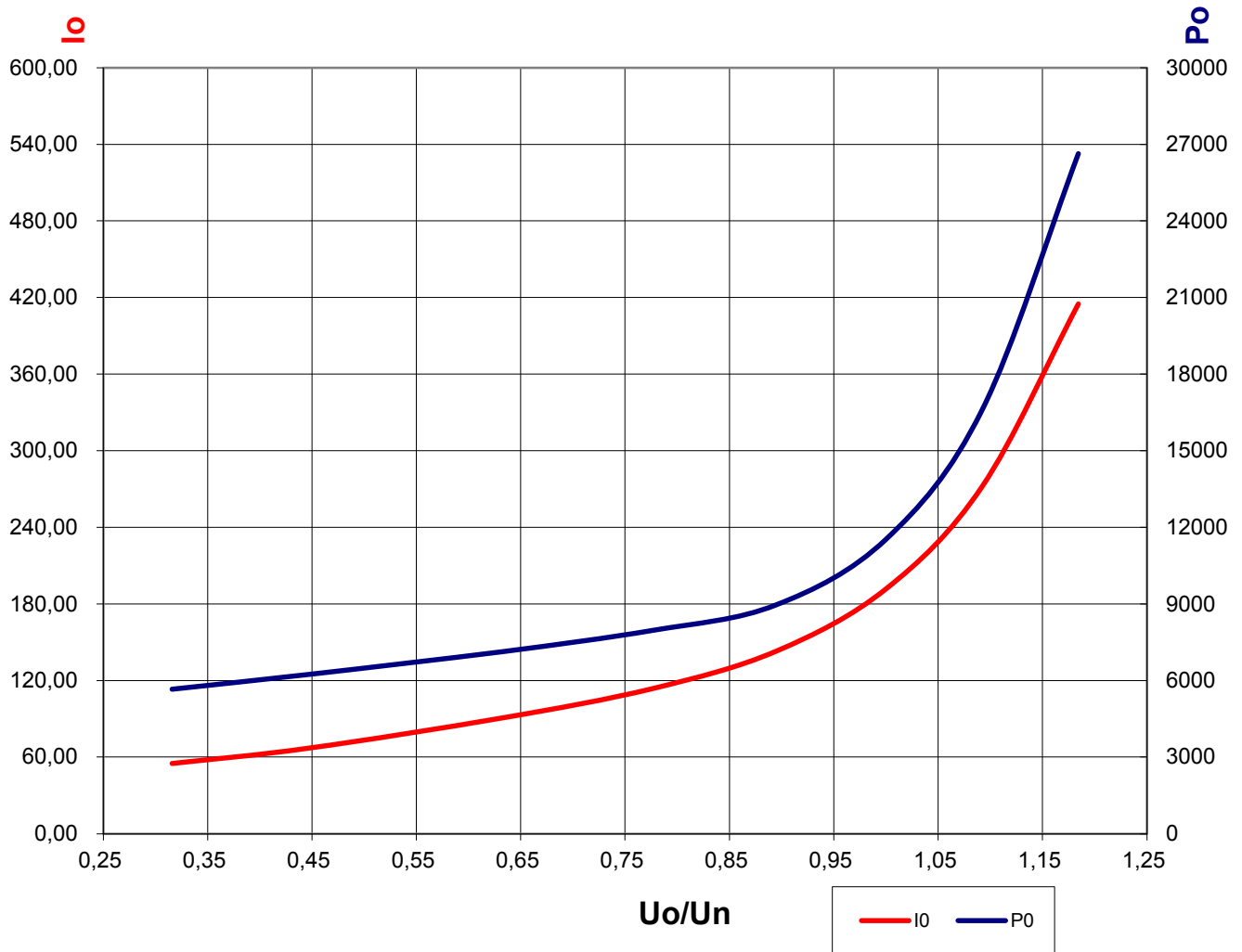
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Voltage : 380 V	Conn. : Δ	Frequency : 50 Hz	Cos ϕ : 0.89
Current : 891 A	Speed : 2985 rpm	Eff. : 95.8 %	

No-load Test





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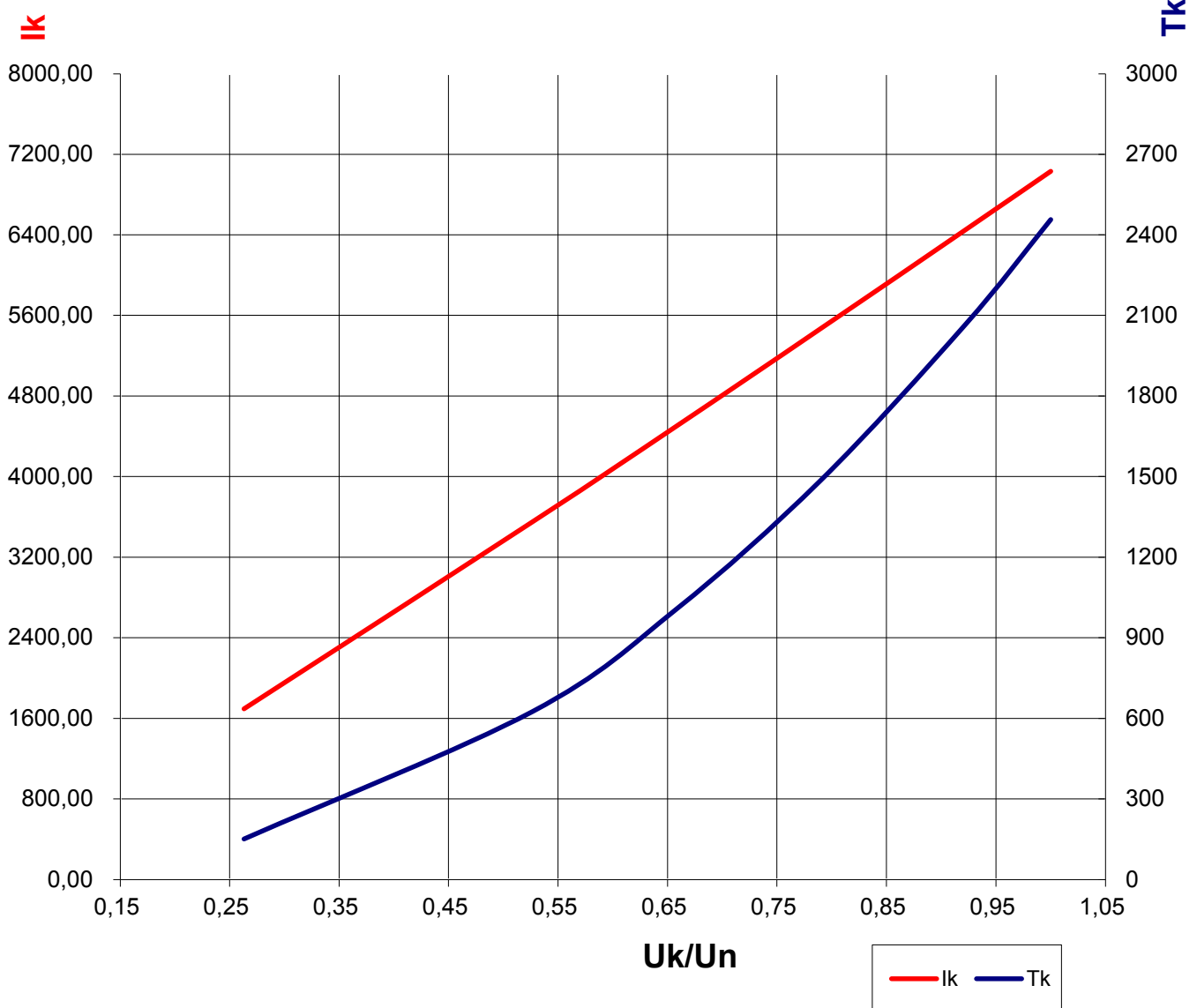
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Voltage : 380 V	Conn. : Δ	Duty type : S1	
Current : 891 A	Speed : 2985 rpm	Frequency : 50 Hz	Cos ϕ : 0.89
		Eff. : 95.8 %	

Locked-rotor Test1





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Voltage : 380 V	Conn. : Δ	Duty type : S1
Current : 891 A	Speed : 2985 rpm	Frequency : 50 Hz
		Cos ϕ : 0.89
		Eff. : 95.8 %

Pk

Locked-rotor Test2

