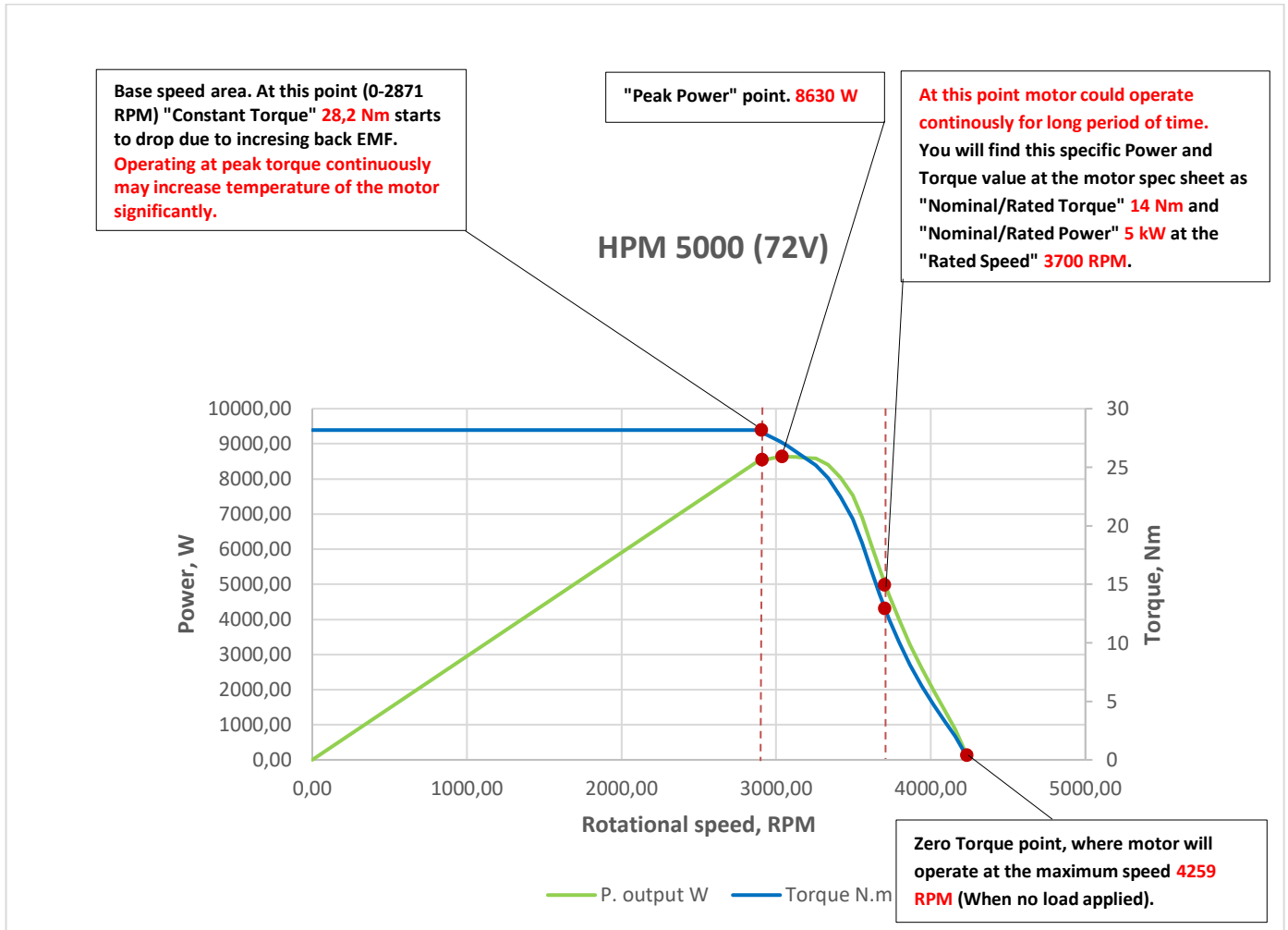


## HPM 5000 (72V) Test report

**Company:**  
**Type:** HPM72-5000 **rated U:** 72 V  
**No.:** G20130516001 **rated I:** 80 A  
**Operator:** 001 **rated P.:** 5000 W  
**Date:** 2013-5-16 **rated N:** 3700 RPM

Items NO.	Voltage V	Current A	P. input W	P. factor PF	Frequency Hz	Torque mN.m	Rotate RPM	P. output W	Efficiency %
1	72.25	6.710	484.84	1.000	0.00	480.0	4259	214.06	44.1
2	72.25	6.990	505.05	1.000	0.00	337.5	4256	150.41	29.8
3	72.24	8.277	597.99	1.000	0.00	182.5	4243	81.08	13.6
4	72.22	11.162	806.17	1.000	0.00	817.5	4210	360.38	44.7
5	72.18	16.002	1155.08	1.000	0.00	1977.5	4158	860.99	74.5
6	72.14	22.500	1623.07	1.000	0.00	3242.5	4091	1389.01	85.6
7	72.09	30.384	2190.32	1.000	0.00	4682.5	4019	1970.57	90.0
8	72.03	39.489	2844.37	1.000	0.00	6300.0	3941	2599.82	91.4
9	71.97	49.601	3569.91	1.000	0.00	8097.5	3867	3278.85	91.8
10	71.91	60.615	4358.98	1.000	0.00	10032.5	3795	3986.74	91.5
11	71.85	72.398	5201.81	1.000	0.00	12067.5	3730	4713.27	90.6
12	71.78	84.862	6091.78	1.000	0.00	14190.0	3668	5450.15	89.5
13	71.73	97.979	7028.03	1.000	0.00	16367.5	3611	6188.80	88.1
14	71.72	111.640	8007.10	1.000	0.00	18515.0	3558	6898.05	86.2
15	71.75	125.233	8984.81	1.000	0.00	20570.0	3496	7530.13	83.8
16	71.71	138.223	9911.24	1.000	0.00	22452.5	3416	8031.18	81.0
17	71.68	150.492	10786.93	1.000	0.00	24072.5	3335	8406.47	77.9
18	71.61	156.790	11227.73	1.000	0.00	25172.5	3258	8587.64	76.5
19	71.61	156.920	11236.26	1.000	0.00	25787.5	3187	8605.73	76.6
20	71.60	156.930	11236.19	1.000	0.00	26335.0	3127	8622.99	76.7
21	71.60	156.905	11235.18	1.000	0.00	26812.5	3074	8630.54	76.8
22	71.59	156.947	11236.66	1.000	0.00	27182.5	3026	8613.01	76.7
23	71.59	157.158	11250.51	1.000	0.00	27502.5	2984	8593.45	76.4
24	71.60	157.178	11253.91	1.000	0.00	27750.0	2944	8554.55	76.0
25	71.61	157.035	11244.88	1.000	0.00	27972.5	2907	8514.77	75.7
26	71.59	157.123	11249.19	1.000	0.00	28175.0	2871	8470.20	75.3



## Regarding Motor Supply Voltage / RPM and Power.

For example if motor is with windings 48V, this motor can also be run at lower (or Higher) voltages, such as 36V (or 72V). The difference is that you wouldn't get as much power output since a lower voltage is associated a lower max attainable rpm. As power (W or Nm/s) is the product of angular speed (1/seconds) and torque (nm), with the same amount of torque and a lower rpm, you would have a lower power output.

**You can achieve the same amount of torque at any voltage** as torque is directly dependent on current. You may see something called a torque constant, such as Nm/A or ft-lbs/A. Simply multiply by the current, and you'll get the torque output before accounting for mechanical and electrical losses.

**The main limiting factor on the amount of current you can pump into a motor is heat, which can melt the insulating varnish if too high.**

At respectively currents **the motor torque at any supply voltage (36V or 48V or 72V) will be the same.**

**Duration of max Power / Torque is defined by motor (& controller) overheating.**

**Therefore, if motor (& controller) cooling is very good duration time of max Power / Torque can last for longer.**