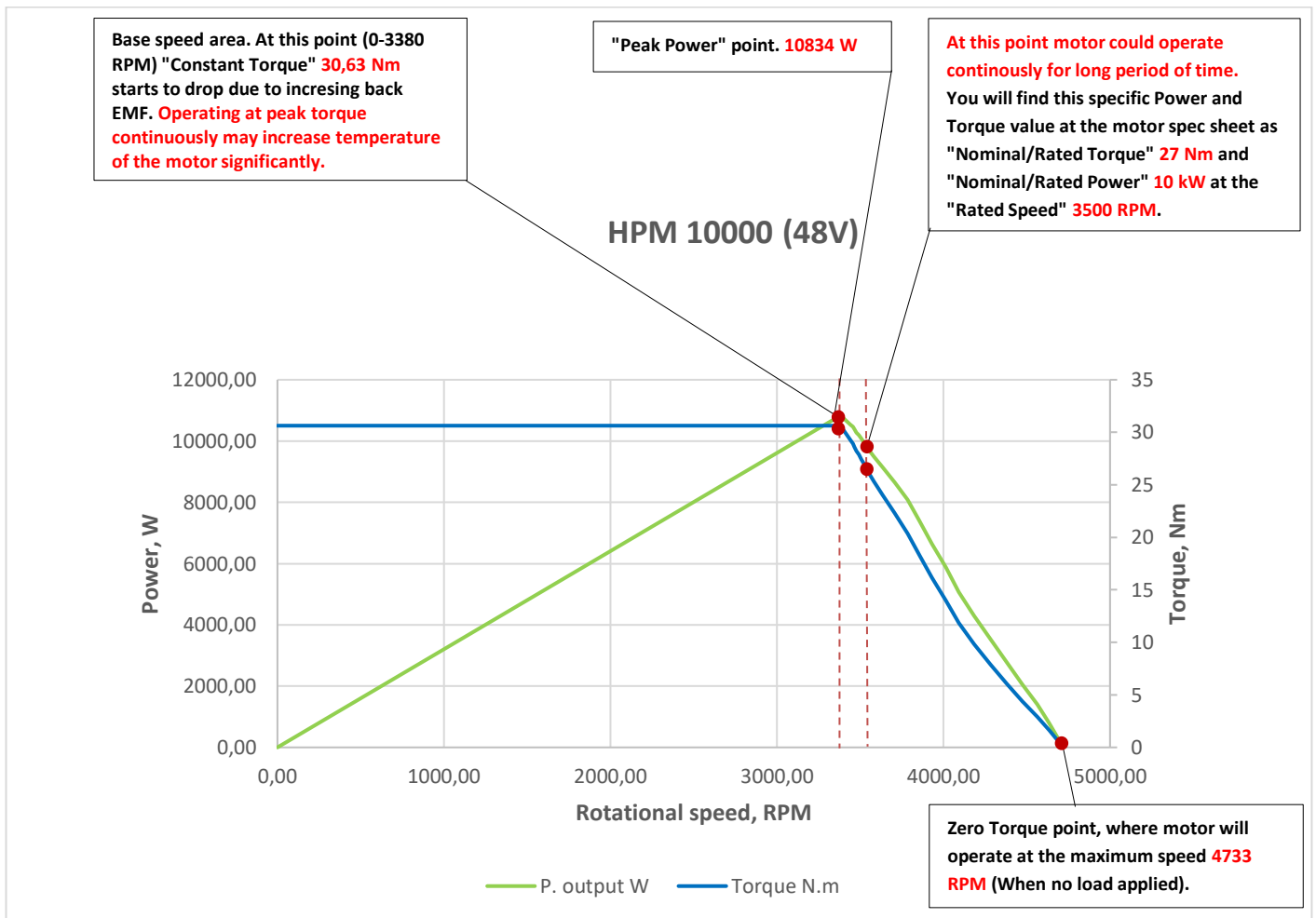


## HPM 10000 (48V) Test report

**Company:**

**Type:** HPM48-10000 **rated U:** 48 V  
**No.:** G20130522003 **rated I:** 250 A  
**Operator:** 001 **rated P.:** 10000 W  
**Date:** 2013-5-22 **rated N:** 3500 RPM

Items	Voltage V	Current A	P. input W	P. factor PF	Frequency Hz	Torque mN.m	Rotate rpm	P. output W	Efficiency %
1	47.87	14.545	696.29	1.000	0.0	420.0	4733	208.15	29.9
2	47.87	14.868	711.73	1.000	0.0	347.5	4731	172.15	24.2
3	47.86	16.493	789.31	1.000	0.0	200.0	4720	98.85	12.5
4	47.83	20.859	997.62	1.000	0.0	595.0	4690	292.20	29.3
5	47.78	28.729	1372.61	1.000	0.0	1640.0	4636	796.13	58.0
6	47.70	39.659	1891.85	1.000	0.0	2925.0	4563	1397.57	73.9
7	47.61	53.020	2524.16	1.000	0.0	4382.5	4475	2053.58	81.4
8	47.51	68.424	3250.81	1.000	0.0	6042.5	4382	2772.59	85.3
9	47.41	85.541	4055.28	1.000	0.0	7857.5	4282	3523.12	86.9
10	47.30	103.661	4902.92	1.000	0.0	9797.5	4183	4291.41	87.5
11	47.26	123.218	5822.95	1.000	0.0	11830.0	4091	5067.70	87.0
12	47.33	142.868	6762.28	1.000	0.0	13985.0	4013	5876.63	86.9
13	47.30	162.723	7697.18	1.000	0.0	16152.5	3931	6648.74	86.4
14	47.28	182.568	8631.79	1.000	0.0	18295.0	3855	7385.05	85.6
15	47.23	201.640	9522.95	1.000	0.0	20382.5	3785	8078.30	84.8
16	47.03	219.285	10312.43	1.000	0.0	22300.0	3707	8656.14	83.9
17	46.77	235.073	10994.34	1.000	0.0	24005.0	3634	9134.47	83.1
18	46.61	247.863	11552.25	1.000	0.0	25317.5	3581	9493.40	82.2
19	46.53	257.188	11966.29	1.000	0.0	26252.5	3547	9750.54	81.5
20	46.48	263.805	12260.34	1.000	0.0	26925.0	3525	9938.29	81.1
21	46.43	268.957	12489.04	1.000	0.0	27422.5	3507	10070.23	80.6
22	46.40	273.243	12678.45	1.000	0.0	27860.0	3492	10187.13	80.3
23	46.37	277.053	12846.23	1.000	0.0	28227.5	3478	10280.13	80.0
24	46.34	280.695	13007.41	1.000	0.0	28595.0	3466	10378.04	79.8
25	46.31	283.920	13149.75	1.000	0.0	28910.0	3455	10459.06	79.5
26	46.29	286.955	13282.43	1.000	0.0	29230.0	3442	10535.04	79.3
27	46.30	288.954	13334.40	1.000	0.0	30628.0	3380	10834.68	81.2



## 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.**