

SG ModPL Charge Test

3/29/2016

Wheel 1 Board 1 8 Trans 21 Magnets

Test #	Gap	RPM	Resistor	Charge Amps	Primary Amps	Charge Volts	Primary Volts	Discharge Volts	Charge Hrs	Discharge Hrs	Primary Watt-Hrs	Charge Watt-Hrs	Discharge Watt-Hrs	D/C Ratio	D/P Ratio	D/(C+P)
1	0.160"	194	w/R12	0.22	0.73	13.35	24.28	12.33	1.40	1.73	24.72	7.58	14.53	1.92	0.59	0.45

SG Standard Configuration

Tested 3/21/2016

2	0.160"	257	w/R12	0.66	1.35	13.02	12.36	12.31	1.40	1.20	23.30	12.03	9.90	0.82	0.42	
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Wheel #2 Mod PL Run

Tested 4/6/2016

3	0.135"	274	w/R12	0.32	1.09	13.81	24.25	12.35	0.75	1.38	19.82	5.75	11.61	2.02	0.59	0.45
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Wheel #2 Standard Configuration

Tested 3/28/2016

4	0.130"	300	w/R12	0.87	1.79	13.10	12.32	12.31	1.40	1.63	30.93	15.90	13.67	0.86	0.44	
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Charge battery discharged down to 12.19 volts with noted time (Discharge Hrs). Discharge Load 0.68 amp.

Primary watt-hrs calculated from average Primary amps and run voltage - same steps for Charge watt-hrs. All power calcs based on 24 volt value

D/C equals (Discharge Watt hrs)/(Charge Watt hrs). This ratio can be interpreted as the Charge efficiency for this SG configuration.

Not relevant for PL

Mod due to added run battery charging effect.

D/P equals ((Discharge Watt hrs)/(Primary Watt hrs)). This ratio can be interpreted as the overall power efficiency (COP) for this SG configuration.

D/(C+P) equals ((Discharge watt hrs)/(Charge watt hrs + Primary watt hrs)). This ratio is the total battery efficiency.

Watt hours can be converted to Joules by multiplying by 3600, however the result is a large number within the spreadsheet cell - too cumbersome