

**ELECTRIC MOTOR TEST DATA SHEET rev1 01/02/21**

**Date of Test** 02/03/21

**Motor Details**

<b>Make</b>	<b>Size</b>	<b>Watts</b>	<b>Kv Factor</b>
Overlander Thumper	T4240	500	890

**Test Rig Components**

<b>Battery # Cells</b>	<b>Esc Amps</b>	<b>Watt Meter</b>	<b>Rev Meter</b>
3s 11.1v 2200 mAHr	80A Cont	150A	Not Used
4s 14.8v <b>See note 1 and rev 3 below</b>			

**Test Data Results**

<b>Prop Size</b>	<b>Make</b>	<b>Thrust (Grams)</b>				<b>Amps</b>				<b>Watts</b>			
		<b>25%/50%/75%/100%</b>				<b>25%/50%/75%/100%</b>				<b>25%/50%/75%/100%</b>			
<b>3s battery</b>													
11X7	APC	113	495	1300	1430	1.4	4.6	20	24.8	15.0	62	220	260
11X7	BONE	129	540	1400	1500	1.4	4.6	21	24.2	15.7	52	225	250
<b>4s battery</b>													
11x5.5	Blk	206	637	1778	1937	1.4	3.4	24	26.8	21.3	84	319	358
10x5	APC	350	480	1650	1720	1.75	6.3	24.7	27.2	30	95	361	400
10x6	APC	237	735	1900	1910	2.0	6.9	27	28	37	93	374	396
11X7	BONE	182	800	2008	2149	2.0	8.0	31.8	33.9	111	126	445	480
11x7	APC	238	829	2140	2150	1.2	8.6	33.7	35.7	32	133	479	508
11x7.5	Blk	388	729	2020	2090	2.4	7.2	28.2	30.2	27	113	395	410

**Model Details**

<b>Name</b>	<b>Size(span inches)</b>	<b>Weight(Kg)</b>	<b>Type</b>	<b>Motor Size</b>
Gangster 52	52"	2.0 Kg est	Sport	T4240

**Comments/conclusions**

This test has been carried out specifically to test the complete power train for this model. And to determine if sufficient thrust can be developed for take off. In selecting the prop size. Initially, we are looking at one that provides a thrust/weight ratio of  $\Rightarrow 0.7$ . Using the initial test data for all props **Those that do not meet this criteria have been excluded.** In addition, the prop diameter is a factor to consider for ground clearance. Max diameter of prop is 11" giving 1" ground clearance. **Props that do not meet this have also excluded.** Which results in the above list

Based on the above data, the thrust of the motor is between 1430 and 2149 Kg, depending on prop selection and battery. The model estimated weight is 2.0Kg to 2.5Kg. Final prop selection will be made after the model is completed.

**Note 1:** A further test was carried out using a 4s battery, This resulted in other possible props which are listed above. Values shown in **RED exceed limits.**

**Rev3: 20/04/2023:** Model has now been successfully flown. 4S battery. 11x5.5 APC Prop, Weight 1.96Kg. **Good result. Well worth the time used in pre-testing.**