

Scorpion SII-4025-520 Motor Propeller Data

Magnets 14-Pole	Motor Wind 11-Turn Delta	Motor Kv 520 RPM/Volt	No-Load Current I _o = 1.40 Amps @ 10v		Motor Resistance R _m = 0.016 Ohms	I Max 100 Amps	P Max (6S) 2000 W			
Stator 12-Slot	Outside Diameter 48.9 mm, 1.925 in.	Body Length 54.1 mm, 2.129 in.	Total Shaft Length 85 mm, 3.346 in.		Shaft Diameter 5.98 mm, 0.235 in.	Motor Weight 353 gm, 11.96 oz				
Test Data From Sample Motor		Input I _o Value	12.0 V 1.52 A	16.0 V 1.77 A	20.0V 2.01 A	24.0V 2.29 A	Measured Kv value 531 RPM/Volt	Measured R _m Value 0.017 Ohms		
Prop Manf.	Prop Size	Li-Po Cells	Input Voltage	Motor Amps	Input Watts	Prop RPM	Pitch Speed in MPH	Thrust Grams	Thrust Ounces	Thrust Eff. Grams/W
APC	13x10-E	5	18.5	54.18	1002.4	8,083	76.5	2875	101.41	2.87
APC	14x10-E	5	18.5	49.56	916.9	8,225	77.9	3559	125.54	3.88
APC	14x12-E	5	18.5	67.68	1252.1	7,527	85.5	3044	107.37	2.43
APC	15x8-E	5	18.5	50.05	925.9	8,014	60.7	3970	140.04	4.29
APC	15x10-E	5	18.5	74.85	1384.7	7,574	71.7	4272	150.69	3.09
APC	16x8-E	5	18.5	78.11	1445.1	7,432	56.3	4980	175.66	3.45
APC	16x10-E	5	18.5	89.08	1648.0	7,311	69.2	4998	176.30	3.03
APC	16x12-E	5	18.5	100.26	1854.7	7,031	79.9	4426	156.12	2.39
APC	17x8-E	5	18.5	87.07	1610.7	7,363	55.8	5594	197.32	3.47
APC	17x10-E	5	18.5	95.29	1762.9	6,951	65.8	5528	194.99	3.14
APC	17x12-E	5	18.5	104.50	1933.3	6,728	76.5	5248	185.12	2.71
APC	18x8-E	5	18.5	86.64	1602.9	7,370	55.8	6814	240.35	4.25
APC	18x10-E	5	18.5	97.94	1811.9	7,046	66.7	6704	236.47	3.70
MAS	13x8x3	5	18.5	44.90	830.7	8,470	64.2	3735	131.75	4.50
MAS	14x7x3	5	18.5	50.65	937.1	8,135	53.9	4330	152.73	4.62
MAS	14x9x3	5	18.5	62.99	1165.3	8,003	68.2	4982	175.73	4.28
MAS	15x7x3	5	18.5	63.43	1173.5	7,809	51.8	5221	184.16	4.45
MAS	16x8x3	5	18.5	72.78	1346.4	7,558	57.3	5816	205.15	4.32
MAS	16x10x3	5	18.5	90.29	1670.3	7,101	67.2	6486	228.78	3.88
APC	12x8-E	6	22.2	44.97	998.3	10,104	76.5	3065	108.11	3.07
APC	12x10-E	6	22.2	56.34	1250.7	9,807	92.9	3223	113.69	2.58
APC	12x12-E	6	22.2	59.86	1328.9	9,692	110.1	3053	107.69	2.30
APC	13x6.5-E	6	22.2	49.27	1093.9	9,741	60.0	3966	139.90	3.63
APC	13x8-E	6	22.2	56.75	1259.7	9,798	74.2	4131	145.72	3.28
APC	13x10-E	6	22.2	76.32	1694.2	9,250	87.6	3820	134.75	2.25
APC	14x7-E	6	22.2	65.07	1444.5	9,374	62.1	4707	166.03	3.26
APC	14x8.5-E	6	22.2	69.05	1533.0	9,502	76.5	4803	169.42	3.13
APC	14x10-E	6	22.2	69.83	1550.1	9,457	89.6	4751	167.58	3.06
APC	14x12-E	6	22.2	96.16	2134.8	8,697	98.8	4091	144.30	1.92
APC	15x4-E	6	22.2	49.06	1089.1	9,796	37.1	4958	174.89	4.55
APC	15x6-E	6	22.2	70.14	1557.0	9,481	53.9	5560	196.12	3.57
APC	15x8-E	6	22.2	74.05	1643.9	9,339	70.8	5359	189.03	3.26
APC	15x10-E	6	22.2	100.94	2240.9	8,429	79.8	5297	186.84	2.36
MAS	12x6x3	6	22.2	37.21	826.1	10,388	59.0	3524	124.30	4.27
MAS	12x8x3	6	22.2	50.78	1127.2	9,782	74.1	4378	154.43	3.88
MAS	13x8x3	6	22.2	56.72	1259.2	9,620	72.9	4825	170.20	3.83
MAS	14x7x3	6	22.2	70.72	1570.0	9,413	62.4	5966	210.44	3.80
MAS	14x9x3	6	22.2	82.81	1838.3	9,114	77.7	6532	230.41	3.55
MAS	15x7x3	6	22.2	83.11	1845.1	8,868	58.8	6834	241.06	3.70
MAS	16x8x3	6	22.2	100.23	2225.1	8,646	65.5	7852	276.97	3.53

Propeller Chart Color Code Explanation

- The prop is too small to get good performance from the motor. (Less than 50% power)
- The prop is sized right to get good power from the motor. (50 to 80% power)
- The prop can be used, but full throttle should be kept to short bursts. (80 to 100% power)
- The prop is too big for the motor and should not be used. (Over 100% power)

PLEASE NOTE:

The Data contained in this Prop Chart is based on actual measurements, taken in a controlled test environment, at an altitude of 512 feet above sea level. The test voltages used are based on the standard output of a Li-Po battery under load, which is 3.70 volts per cell. If you are using a battery that is larger in capacity than normal, or has a very high C-rating, then your actual voltages will be higher than those shown in the chart, and this will result in a higher current and power value for every prop used. You should always test your actual power system with a watt meter before flying your model to make sure that you are not exceeding the recommended current and power ratings of the motor being used. The prop recommendations in this chart assume that the motor receives adequate cooling throughout its operation. If your motor is being used inside a cowl or fuselage, you must ensure that the motor receives sufficient airflow, and does not get too hot during operation. It is always best to use a prop size that pulls no more than 80% of the motors maximum recommended current value to ensure safe operation under all conditions.