

Scorpion SII-4020-540 Motor Propeller Data

Magnets 14-Pole	Motor Wind 13-Turn Delta	Motor Kv 540 RPM/Volt	No-Load Current I _o = 1.22 Amps @ 10v	Motor Resistance R _m = 0.021 Ohms	I Max 85 Amps	P Max (6S) 1850 W				
Stator 12-Slot	Outside Diameter 48.9 mm, 1.925 in.	Body Length 46.2 mm, 1.819 in.	Total Shaft Length 78.4 mm, 3.087 in.	Shaft Diameter 5.98 mm, 0.235 in.	Motor Weight 288 gm, 10.16 oz					
Test Data From Sample Motor	Input Voltage	12.0 V	16.0 V	20.0V	24.0V	Measured Kv Value 555 RPM/Volt	Measured Rm Value 0.021 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	14x8.5-E	4	14.8	34.95	517.2	7,069	56.9	2761	98.10	5.38
APC	14x10-E	4	14.8	35.25	521.7	7,064	66.9	2710	95.59	5.19
APC	14x12-E	4	14.8	51.54	762.8	6,566	74.6	2331	82.22	3.06
APC	15x6-E	4	14.8	34.62	512.4	7,080	40.2	3060	107.94	5.97
APC	15x8-E	4	14.8	37.81	559.6	6,993	53.0	3082	108.71	5.51
APC	15x10-E	4	14.8	52.68	779.6	6,553	62.1	3326	117.32	4.27
APC	16x8-E	4	14.8	56.12	830.5	6,452	48.9	3867	136.40	4.66
APC	16x10-E	4	14.8	61.50	910.2	6,329	59.9	3942	139.05	4.33
APC	16x12-E	4	14.8	73.04	1080.9	5,997	68.1	3240	114.29	3.00
APC	17x8-E	4	14.8	60.89	901.2	6,325	47.9	4297	151.57	4.77
APC	17x10-E	4	14.8	71.70	1061.2	6,027	57.1	4287	151.22	4.04
APC	17x12-E	4	14.8	78.63	1163.8	5,834	66.3	4070	143.56	3.50
APC	18x8-E	4	14.8	63.76	943.6	6,261	47.4	4980	175.66	5.28
APC	18x10-E	4	14.8	72.08	1066.8	5,986	56.7	4900	172.84	4.59
APC	19x8-E	4	14.8	81.71	1209.3	5,695	43.1	5406	190.69	4.47
APC	19x10-E	4	14.8	85.46	1264.8	5,537	52.4	5389	190.09	4.26
MAS	14x7x3	4	14.8	39.39	582.9	6,951	46.1	3198	112.80	5.49
MAS	14x9x3	4	14.8	46.94	694.8	6,715	57.2	3529	124.48	5.08
MAS	15x7x3	4	14.8	49.04	725.7	6,675	44.2	3804	134.18	5.24
MAS	16x8x3	4	14.8	56.09	830.2	6,430	48.7	4256	150.12	5.13
MAS	16x10x3	4	14.8	70.21	1039.1	6,064	57.4	4803	169.42	4.62
APC	11x10-E	5	18.5	35.05	648.3	8,574	85.0	2006	70.76	3.09
APC	12x8-E	5	18.5	35.85	663.2	8,938	67.7	2394	84.44	3.61
APC	12x10-E	5	18.5	43.48	804.4	8,698	82.4	2572	90.72	3.20
APC	12x12-E	5	18.5	47.50	878.7	8,575	97.4	2393	84.41	2.72
APC	13x6.5-E	5	18.5	39.93	736.8	8,807	54.2	3303	116.51	4.47
APC	13x8-E	5	18.5	43.64	807.3	8,689	65.8	3237	114.18	4.01
APC	13x10-E	5	18.5	58.24	1077.4	8,203	77.7	3045	107.41	2.83
APC	14x7-E	5	18.5	51.31	949.3	8,440	55.9	3635	135.27	4.04
APC	14x8.5-E	5	18.5	52.65	974.0	8,413	67.7	3937	138.87	4.04
APC	14x10-E	5	18.5	54.24	1003.4	8,341	79.0	3752	132.35	3.74
APC	14x12-E	5	18.5	74.27	1374.1	7,714	87.7	3236	114.15	2.36
APC	15x4-E	5	18.5	39.68	734.0	8,821	33.4	3911	137.96	5.33
APC	15x6-E	5	18.5	52.47	970.6	8,413	47.8	4499	158.70	4.64
APC	15x8-E	5	18.5	56.40	1043.4	8,296	62.8	4348	153.37	4.17
APC	15x10-E	5	18.5	78.88	1459.2	7,569	71.7	4410	155.56	3.02
APC	16x8-E	5	18.5	83.95	1553.0	7,406	56.1	5097	179.79	3.28
APC	16x10-E	5	18.5	92.32	1707.9	7,253	68.7	5128	180.88	3.00
MAS	12x6x3	5	18.5	30.20	558.8	9,124	51.8	2767	97.60	4.95
MAS	12x8x3	5	18.5	42.81	792.0	8,717	66.0	3535	124.69	4.46
MAS	13x8x3	5	18.5	47.74	883.2	8,544	64.7	3885	137.04	4.40
MAS	14x7x3	5	18.5	55.57	1028.1	8,314	55.1	4542	160.21	4.42
MAS	14x9x3	5	18.5	65.84	1218.1	7,984	68.0	5021	177.11	4.12
MAS	15x7x3	5	18.5	68.71	1271.2	7,894	52.3	5384	189.91	4.24
MAS	16x8x3	5	18.5	78.08	1444.5	7,588	57.5	5939	209.49	4.11
APC	11x7-E	6	22.2	35.15	780.2	10,849	71.9	2988	105.40	3.83
APC	11x8-E	6	22.2	39.27	871.7	10,712	81.2	2828	98.75	3.24
APC	11x8.5-E	6	22.2	42.52	944.0	10,593	85.3	2868	101.16	3.04
APC	11x10-E	6	22.2	48.69	1081.0	10,371	98.2	2712	95.66	2.51
APC	12x6-E	6	22.2	40.57	900.6	10,663	60.6	3652	126.82	4.06
APC	12x8-E	6	22.2	49.92	1108.2	10,334	78.3	3265	115.17	2.95
APC	12x10-E	6	22.2	60.96	1353.2	9,965	94.4	3375	119.05	2.49
APC	12x12-E	6	22.2	64.07	1422.2	9,858	112.0	3180	112.17	2.24
APC	13x4-E	6	22.2	33.15	736.0	10,933	41.4	3562	125.64	4.84
APC	13x6.5-E	6	22.2	57.98	1287.2	10,065	62.0	4302	151.75	3.34
APC	13x8-E	6	22.2	61.44	1364.0	9,953	75.4	4332	152.81	3.18
APC	13x10-E	6	22.2	80.27	1782.1	9,315	88.2	3945	139.15	2.21
APC	14x7-E	6	22.2	73.71	1636.3	9,540	63.2	4965	175.13	3.03
APC	14x8.5-E	6	22.2	73.90	1640.6	9,576	77.1	4969	175.27	3.03
APC	14x10-E	6	22.2	74.57	1655.4	9,514	90.1	4864	171.57	2.94
APC	15x4-E	6	22.2	57.66	1280.1	10,079	38.2	5456	192.45	4.26
APC	15x6-E	6	22.2	75.17	1668.7	9,497	54.0	5730	202.12	3.43
APC	15x8-E	6	22.2	78.71	1747.4	9,377	71.0	5501	194.04	3.15
APC	15x10-E	6	22.2	112.45	2496.4	8,739	82.8	5712	201.48	2.29
MAS	12x6x3	6	22.2	40.72	904.1	10,655	60.5	3808	134.32	4.21
MAS	12x8x3	6	22.2	57.24	1270.8	10,091	76.4	4737	167.09	3.73
MAS	13x8x3	6	22.2	64.28	1426.9	9,867	74.8	5286	186.46	3.70
MAS	14x7x3	6	22.2	73.85	1639.5	9,510	63.0	6079	214.43	3.71
MAS	14x9x3	6	22.2	86.50	1920.3	9,040	77.0	6518	229.91	3.39

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 cowling 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.