

Scorpion SII-4025-440 Motor Propeller Data

Magnets 14-Pole		Motor Wind 13-Turn Delta		Motor Kv 440 RPM/Volt		No-Load Current I ₀ = 1.10 Amps @ 10v		Motor Resistance R _m = 0.025 Ohms		I Max 85 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 Lo Value		12.0 V 1.19 A		16.0 V 1.37 A		20.0V 1.56 A		24.0V 1.76 A		Measured Kv Value 451 RPM/Volt		Measured Rm Value 0.023 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	35.73	661.0	7,253	68.7	2339	82.50	3.54					
APC	14x10-E	5	18.5	32.61	603.3	7,345	69.6	2923	103.10	4.84					
APC	14x12-E	5	18.5	48.30	893.6	6,935	78.8	2603	91.82	2.91					
APC	15x8-E	5	18.5	34.50	638.3	7,296	55.3	3336	117.67	5.23					
APC	15x10-E	5	18.5	49.98	924.7	6,883	65.2	3654	128.89	3.95					
APC	16x8-E	5	18.5	53.74	994.2	6,803	51.5	4297	151.57	4.32					
APC	16x10-E	5	18.5	56.20	1039.7	6,564	62.2	4214	148.64	4.05					
APC	16x12-E	5	18.5	69.56	1286.8	6,396	72.7	3742	131.99	2.91					
APC	17x8-E	5	18.5	57.58	1065.2	6,704	50.8	4786	168.82	4.49					
APC	17x10-E	5	18.5	68.01	1258.3	6,418	60.8	4846	170.94	3.85					
APC	17x12-E	5	18.5	76.29	1411.3	6,226	70.8	4655	164.20	3.30					
APC	18x8-E	5	18.5	59.28	1096.6	6,649	50.4	5591	197.21	5.10					
APC	18x10-E	5	18.5	68.52	1267.6	6,420	60.8	5688	200.64	4.49					
APC	18x12-E	5	18.5	86.56	1601.4	5,735	65.2	4834	170.51	3.02					
APC	19x8-E	5	18.5	79.52	1471.2	6,111	46.3	6161	217.32	4.19					
APC	19x10-E	5	18.5	77.21	1428.5	6,174	58.5	6313	222.68	4.42					
APC	19x12-E	5	18.5	88.62	1639.4	5,873	66.7	6231	219.79	3.80					
APC	20x8-E	5	18.5	80.35	1486.5	6,084	46.1	6796	239.72	4.57					
APC	20x10-E	5	18.5	92.28	1707.2	5,813	55.0	7003	247.02	4.10					
MAS	14x7x3	5	18.5	35.15	650.3	7,263	48.1	3493	123.21	5.37					
MAS	14x9x3	5	18.5	42.06	778.2	7,081	60.3	3874	136.65	4.98					
MAS	15x7x3	5	18.5	43.82	810.7	7,038	46.7	4145	146.21	5.11					
MAS	16x8x3	5	18.5	51.34	949.8	6,839	51.8	4767	168.15	5.02					
MAS	16x10x3	5	18.5	64.80	1198.8	6,519	61.7	5446	192.10	4.54					
APC	13x8-E	6	22.2	36.43	808.7	8,744	66.2	3290	116.05	4.07					
APC	13x10-E	6	22.2	47.67	1058.3	8,245	78.1	3049	107.55	2.88					
APC	14x7-E	6	22.2	43.28	960.8	8,535	56.6	3903	137.67	4.06					
APC	14x8.5-E	6	22.2	44.45	986.9	8,516	68.5	3977	140.28	4.03					
APC	14x10-E	6	22.2	43.32	961.7	8,356	79.1	3748	132.21	3.90					
APC	14x12-E	6	22.2	64.89	1440.6	7,945	90.3	3405	120.11	2.36					
APC	15x4-E	6	22.2	32.72	726.4	8,861	33.6	3944	139.12	5.43					
APC	15x6-E	6	22.2	44.65	991.1	8,507	48.3	4603	162.36	4.64					
APC	15x8-E	6	22.2	48.45	1075.6	8,413	63.7	4457	157.21	4.14					
APC	15x10-E	6	22.2	67.22	1492.4	7,707	73.0	4578	161.48	3.07					
APC	16x8-E	6	22.2	72.46	1608.5	7,562	57.3	5315	187.48	3.30					
APC	16x10-E	6	22.2	82.53	1832.2	7,465	70.7	5406	190.69	2.95					
APC	16x12-E	6	22.2	92.57	2055.0	7,180	81.6	4787	168.85	2.33					
APC	17x8-E	6	22.2	80.01	1776.3	7,524	57.0	5936	209.38	3.34					
APC	17x10-E	6	22.2	91.89	2040.0	7,171	67.9	6076	214.32	2.98					
APC	18x8-E	6	22.2	82.53	1832.2	7,501	56.8	7346	259.12	4.01					
MAS	13x8x3	6	22.2	40.23	893.1	8,646	65.5	3992	140.81	4.47					
MAS	14x7x3	6	22.2	45.46	1009.3	8,309	55.1	4613	162.72	4.57					
MAS	14x9x3	6	22.2	56.73	1259.3	8,168	69.6	5274	186.03	4.19					
MAS	15x7x3	6	22.2	59.39	1318.5	8,080	53.6	5674	200.14	4.30					
MAS	16x8x3	6	22.2	65.83	1461.4	7,746	58.7	6250	220.46	4.28					
MAS	16x10x3	6	22.2	85.77	1904.1	7,361	69.7	7168	252.84	3.76					
APC	12x8-E	7	25.9	39.25	1016.6	10,189	77.2	3187	112.42	3.14					
APC	12x10-E	7	25.9	48.75	1262.7	9,892	93.7	3319	117.07	2.63					
APC	12x12-E	7	25.9	51.60	1336.4	9,807	111.4	3150	111.11	2.36					
APC	13x4-E	7	25.9	26.49	686.2	10,824	41.0	3487	123.00	5.08					
APC	13x6.5-E	7	25.9	46.34	1200.2	9,965	61.3	4211	148.54	3.51					
APC	13x8-E	7	25.9	50.04	1296.1	9,859	74.7	4274	150.76	3.30					
APC	13x10-E	7	25.9	66.14	1713.1	9,342	88.5	3941	139.01	2.30					
APC	14x7-E	7	25.9	60.25	1560.5	9,554	63.3	5040	177.78	3.23					
APC	14x8.5-E	7	25.9	60.19	1559.0	9,552	76.9	4960	174.96	3.18					
APC	14x10-E	7	25.9	58.38	1512.0	9,390	88.9	4792	169.03	3.17					
APC	15x4-E	7	25.9	42.88	1110.5	9,868	37.4	5095	179.72	4.59					
APC	15x6-E	7	25.9	58.57	1517.0	9,388	53.3	5612	197.96	3.70					
APC	15x8-E	7	25.9	65.24	1689.6	9,399	71.2	5585	197.00	3.31					
APC	15x10-E	7	25.9	93.87	2431.3	8,548	80.9	5614	198.03	2.31					
APC	16x8-E	7	25.9	97.11	2515.1	8,390	63.6	6547	230.94	2.60					
MAS	12x6x3	7	25.9	30.66	794.0	10,264	58.3	3515	123.99	4.43					
MAS	12x8x3	7	25.9	46.11	1194.4	9,968	75.5	4655	164.20	3.90					
MAS	13x8x3	7	25.9	51.67	1338.4	9,802	74.3	5176	182.58	3.87					
MAS	14x7x3	7	25.9	60.90	1577.3	9,546	63.3	6133	216.33	3.89					
MAS	14x9x3	7	25.9	72.22	1870.5	9,177	78.2	6738	237.67	3.60					
MAS	15x7x3	7	25.9	76.00	1968.3	9,064	60.1	7341	258.94	3.73					
MAS	16x8x3	7	25.9	83.33	2158.4	8,611	65.2	7792	274.85	3.61					
MAS	16x10x3	7	25.9	104.31	2701.6	8,120	76.9	8793	310.16	3.25					

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.