

Scorpion Power System Performance Report

Motor - IM-8008-100kv

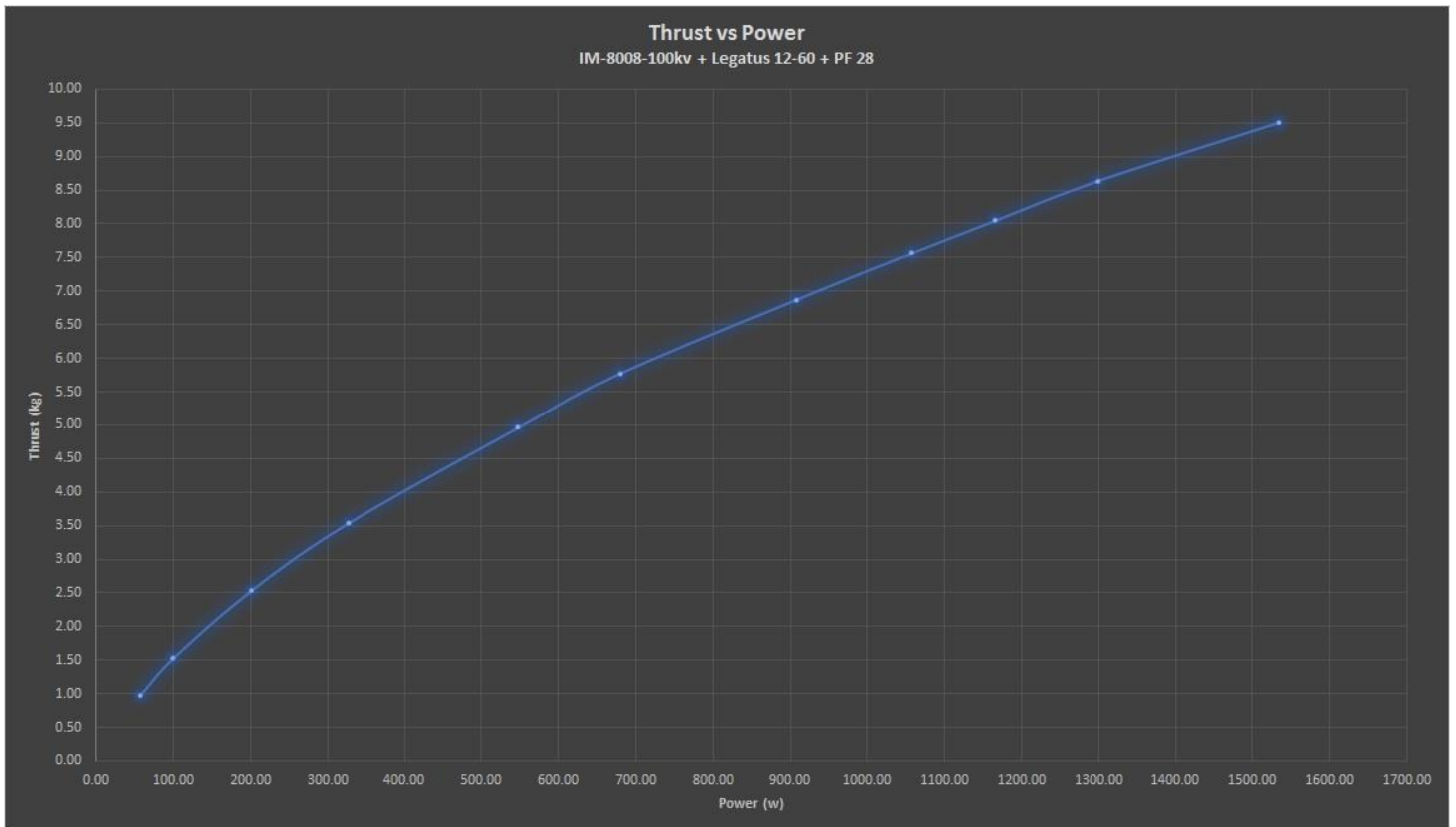
ESC – Legatus 12-60A

Prop – Scorpion PF28

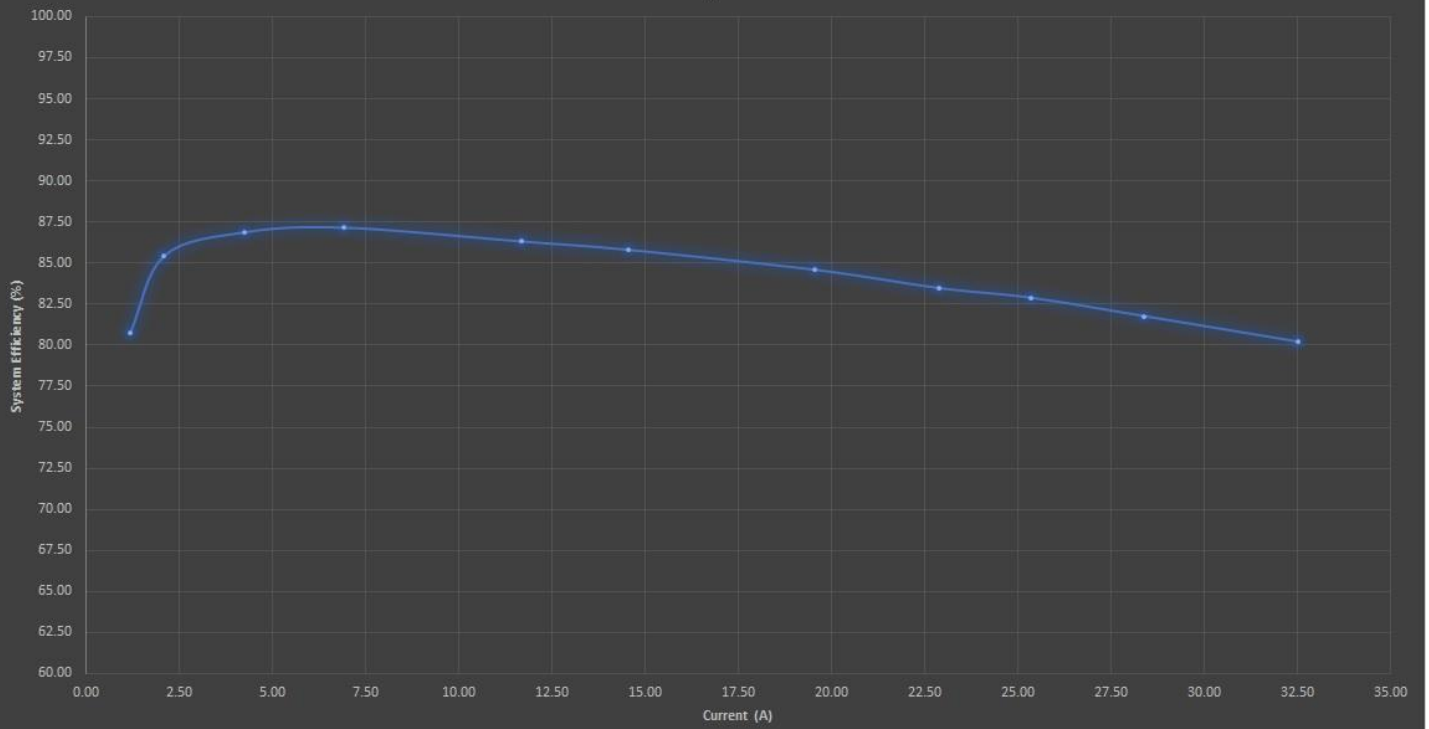
Battery - 12s (44.4V)



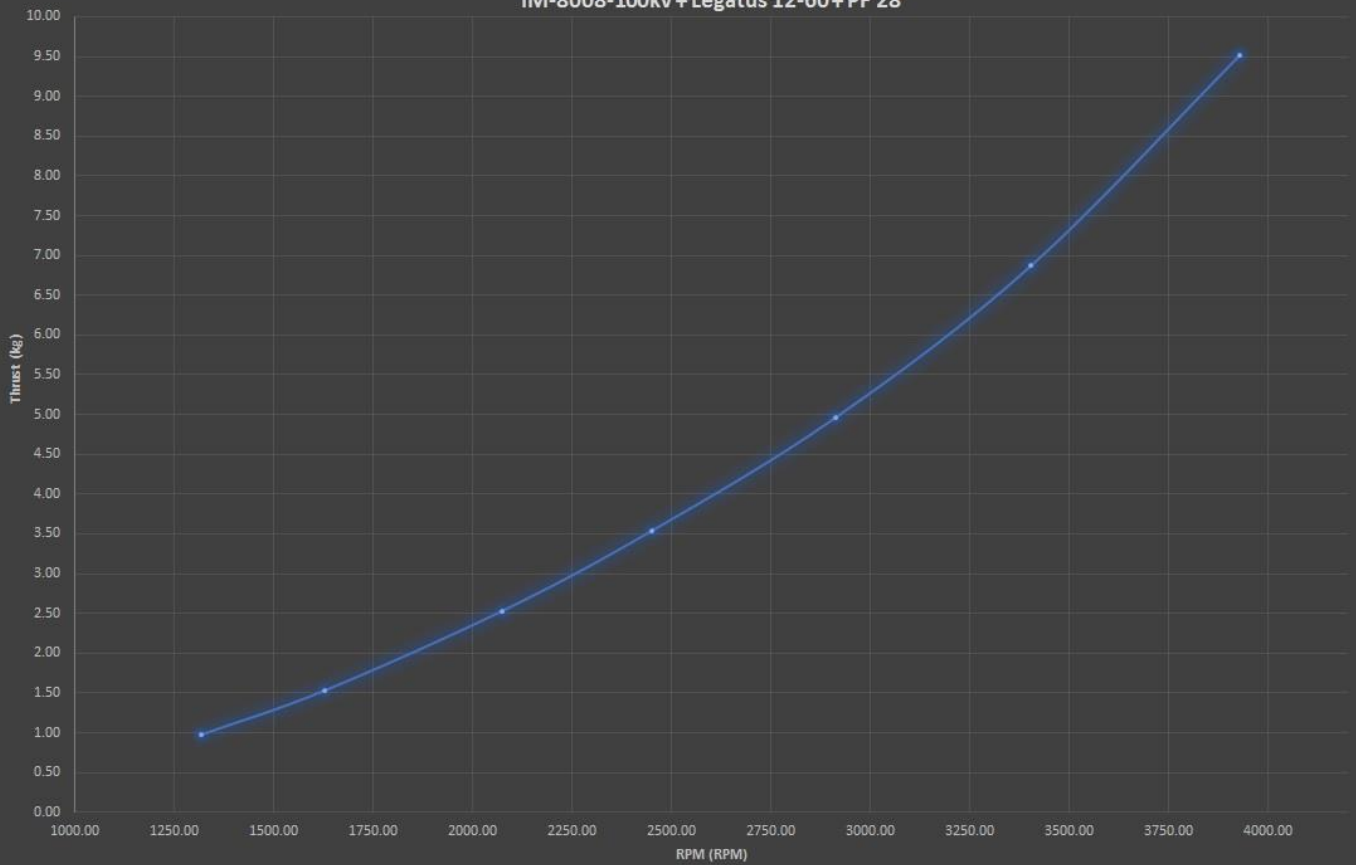
DATA CHARTS



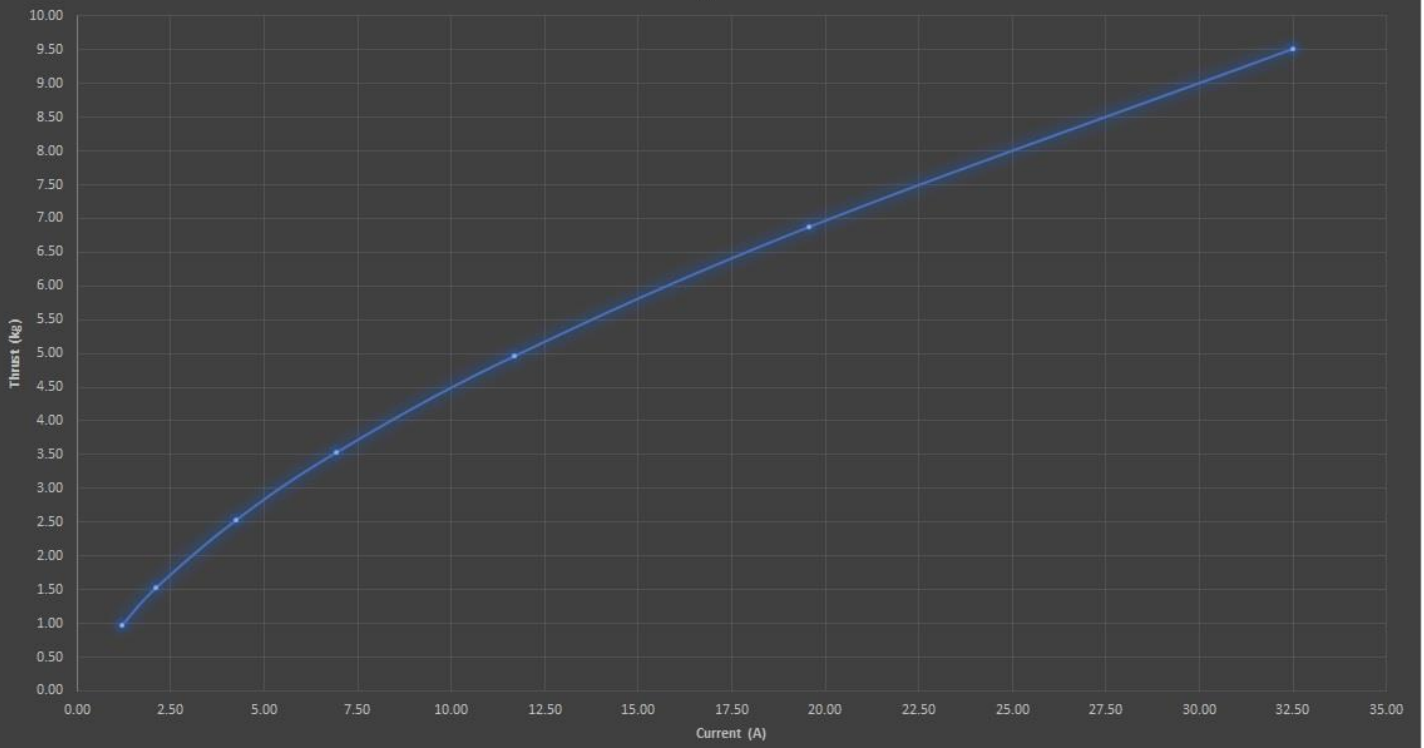
Efficiency vs Current
IM-8008-100kv + Legatus 12-60 + PF 28



Thrust vs RPM
IM-8008-100kv + Legatus 12-60 + PF 28



Thrust vs Current
IM-8008-100kv + Legatus 12-60 + PF 28



DATA TABLE

ESC throttle (μs)	voltage (V)	current (A)	force Fz (thrust) (gf)	(torque) (N-m)	rotation speed (rpm)	electrical power (W)	mechanical power (W)	motor & ESC efficiency (%)	propeller efficiency (gf/W)	powertrain efficiency (gf/W)
1326.00	47.39	1.19	0.97	-0.33	1318.14	56.40	45.52	80.72	21.40	17.27
1397.00	47.38	2.10	1.53	-0.50	1628.36	99.63	85.12	85.44	17.98	15.36
1456.00	47.35	3.11	2.02	-0.65	1870.50	147.42	126.95	86.12	15.88	13.68
1507.00	47.29	4.24	2.53	-0.80	2075.85	200.67	174.32	86.87	14.53	12.62
1558.00	47.22	5.59	3.03	-0.97	2275.72	263.96	229.98	87.13	13.18	11.48
1602.00	47.14	6.93	3.54	-1.11	2450.02	326.64	284.68	87.16	12.42	10.82
1647.00	47.06	8.52	4.02	-1.27	2619.92	401.12	347.64	86.67	11.56	10.02
1690.00	46.96	10.39	4.57	-1.45	2771.75	487.68	421.69	86.47	10.84	9.37
1724.00	46.85	11.68	4.95	-1.55	2913.08	547.38	472.47	86.31	10.48	9.05
1777.00	46.69	14.55	5.77	-1.80	3100.19	679.31	582.84	85.80	9.91	8.50
1818.00	46.56	16.51	6.20	-1.93	3253.22	768.54	657.09	85.50	9.43	8.07
1864.00	46.39	19.56	6.87	-2.15	3405.45	907.14	767.27	84.58	8.96	7.58
1916.00	46.17	22.88	7.56	-2.38	3543.77	1056.53	881.88	83.47	8.58	7.16
1951.00	46.01	25.34	8.05	-2.51	3683.14	1165.98	966.41	82.88	8.33	6.91
1982.00	45.85	27.94	8.51	-2.65	3782.89	1280.92	1049.90	81.96	8.10	6.64
2000.00	45.78	28.37	8.64	-2.68	3801.33	1298.73	1061.88	81.76	8.14	6.65
PEAK THRUST										
2000.00	47.21	32.55	9.52	-2.72	4023.45	1534.27	1230.48	80.21	7.73	6.20