Flameback

Advanced Propulsion Systems

Electronic Speed Controller
45A 3-6S

Technical Specifications

FB-ESC-45A6S

Motor	T-Motor Antigravity MN4004 300kV				ESC	Flameback 6S 45A			**Test date**	May 2024	
Propeller									**Control protocol**	Standard PWM	
Time (s)	**Throttle (µs)**	**RPM**	**Thrust (gf)**	**Torque (Nm)**	**Voltage (V)**	**Current (A)**	**Electrical power (W)**	**Mechanical power (W)**	**Motor-ESC efficiency (%)**	**Propeller efficiency (gf/W)**	**Propulsion system efficiency (gf/W)**
0.359	1000	0	0.193	0.000	23.869	0.035	0.828	0.000	0		
5.110	1100	531	8.952	0.002	23.869	0.056	1.343	0.120	8.927	74.682	6.667
9.854	1200	1218	54.830	0.011	23.867	0.139	3.307	1.410	42.647	38.876	16.580
14.593	1300	1832	132.020	0.026	23.863	0.331	7.901	4.892	61.923	26.985	16.710
19.310	1400	2384	231.207	0.044	23.855	0.665	15.866	10.999	69.323	21.021	14.572
24.056	1500	2900	359.748	0.067	23.845	1.165	27.775	20.449	73.624	17.592	12.952
28.804	1600	3403	511.177	0.094	23.827	1.864	44.410	33.650	75.772	15.191	11.510
33.499	1700	3897	692.969	0.126	23.802	2.840	67.592	51.461	76.134	13.466	10.252
38.176	1800	4361	890.816	0.163	23.769	4.164	98.971	74.519	75.293	11.954	9.001
42.876	1900	4838	1085.926	0.199	23.732	5.733	136.056	100.618	73.954	10.793	7.981
47.556	2000	5020	1198.238	0.218	23.709	6.726	159.473	114.697	71.922	10.447	7.514

Plots

Throttle vs Time

RPM vs Time

Thrust vs RPM

Torque vs RPM

Voltage vs RPM

Current vs RPM

Electrical Power vs RPM

Mechanical Power vs RPM

Motor-ESC efficiency vs RPM

Propulsion system efficiency vs RPM