M8110 HighProt Motor Specification

Specification Ⅰ

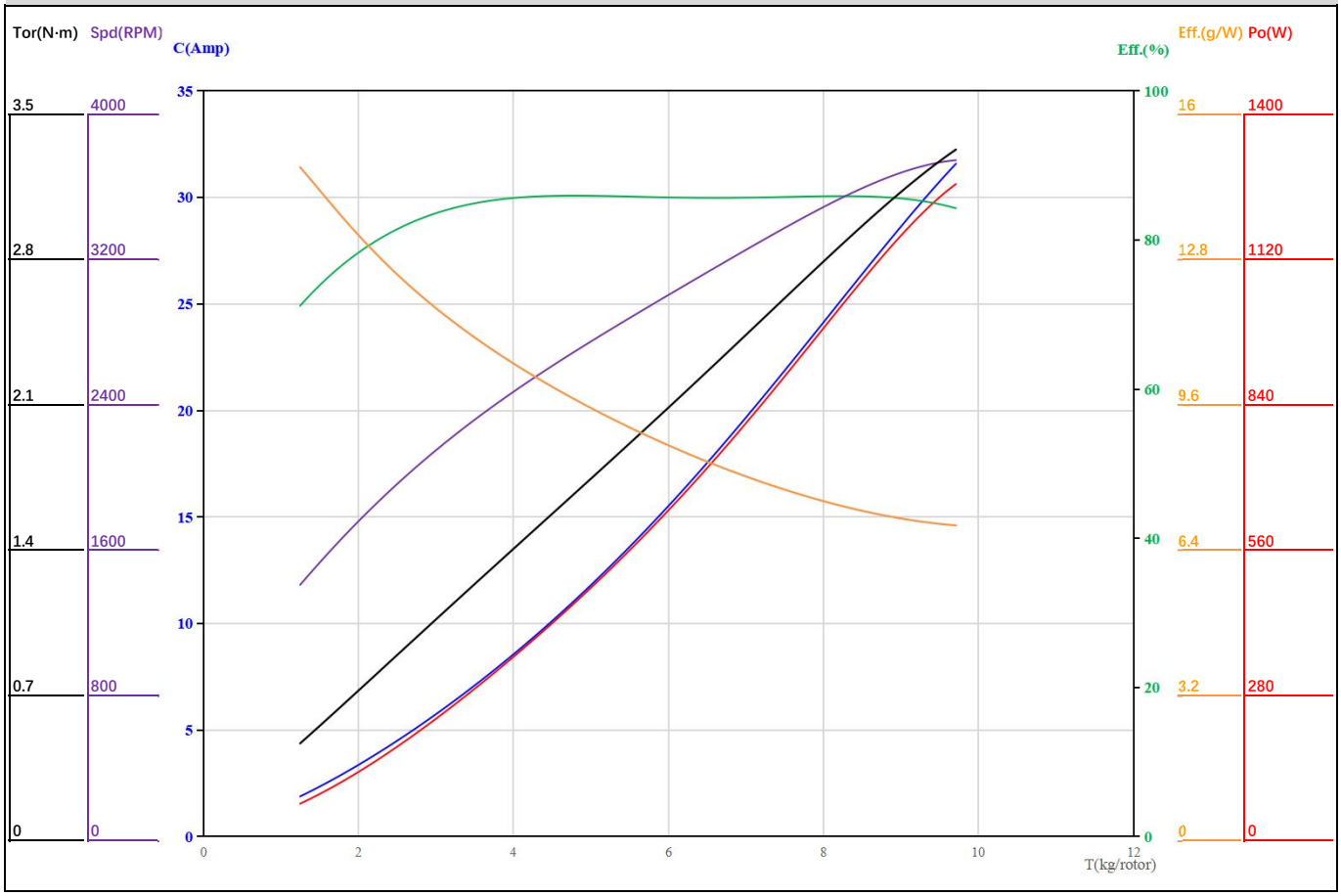
Model	M8110 HighProt-95/110KV	Ingress Protection	IP45
Motor Size	Φ87.1*H28.9 mm	Slot & Pole	36N42P
Dynamic Balance	≤10 mg	Bearing	Water proof bearing
Stator Process	High standard silicon steel sheet, rust proof, 180℃ high temperature resistance paint-coat		
Motor Axle Diameter	shaft sleeve Φ10 mm	Props Mounting Dimensions	4×M4@D23 mm, 4×M3@D20 mm
Enamelled wire	220 ℃	Motor Mounting Dimensions	4×M4@D36 mm
Magnet	180 ℃	Motor Mounting Screw Tightening Torque	2.5~3 N·m
Isolation Test	500V AC high voltage resistance test	Rated RPM	2380 rpm (95KV) 2430 rpm (110KV)
Rated Output Power (Max continuous)	338/350 W (95/110KV)	Rated Power Density	1.07 kW/kg (95KV) 1.10 kW/kg (110KV)

Specification Ⅱ

KV	95 KV	110 KV
Battery (LiPo)	LiPo-12S	LiPo-12S
Rated Voltage	46 V	46 V
No-load Current	1.1 A @46V	1.27 A @46V
Maximum Current (non-hermetic Ambient Temperature ≤ 25℃)	43.2 A @46V	39.2 A @46V
Max Thrust	11.3 kg	11 kg
Resistance	132.9 mΩ	112.3 mΩ
Wire Size	16 AWG	16 AWG
Three-Phase Wires Length	100 mm	100 mm
Weight (with cable)	315 g	317 g

95KV+MSC 30x9.8 (46V) Load Performance Parameters

Graph



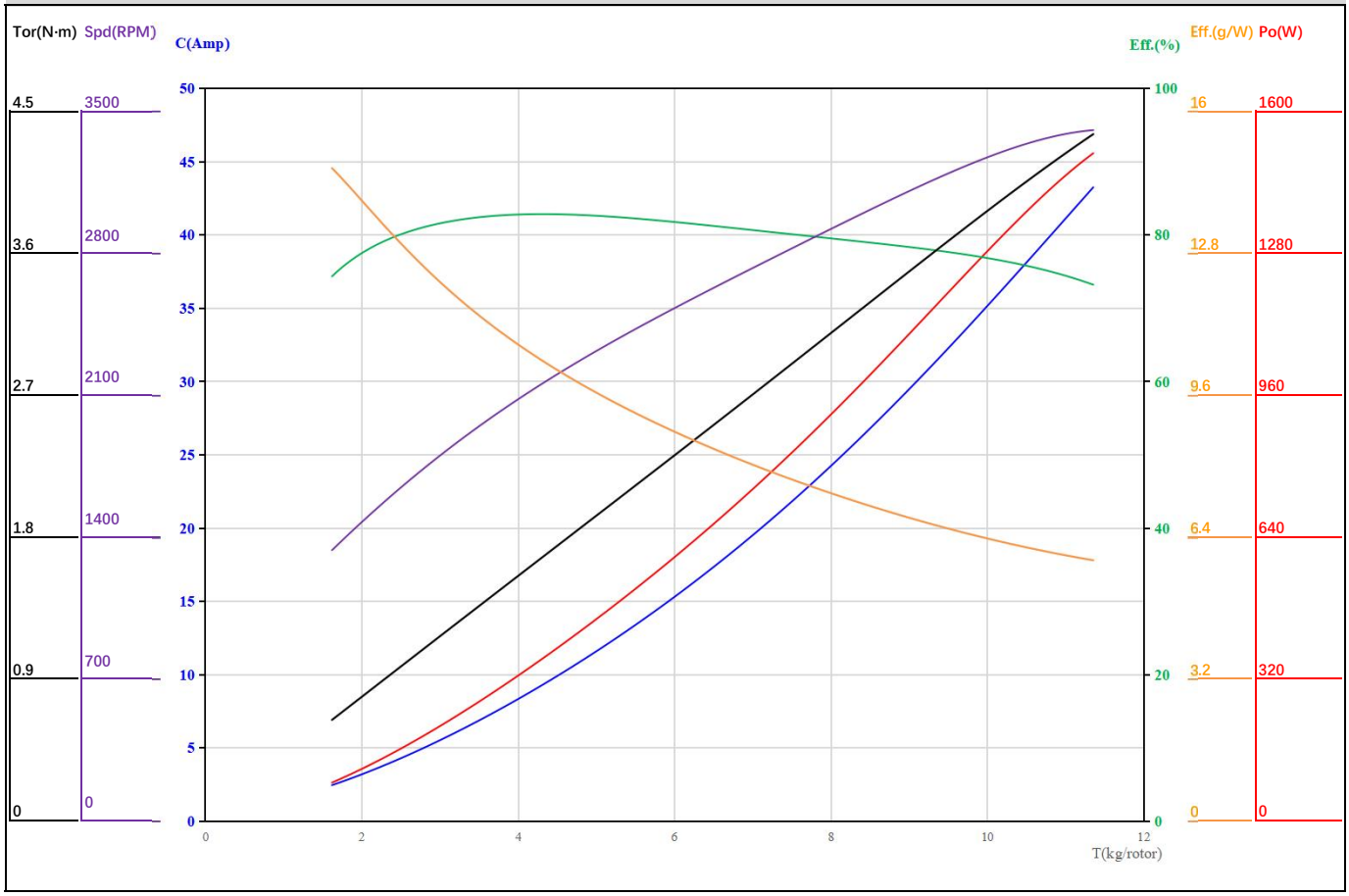
Thrust Test Data

Voltage(V)	Propeller	Throttle(%)	Thrust(g)	Current(A)	Power Input(W)	Speed(RPM)	Efficiency(g/W)	Torque(N·m)	Power Output(W)	Temperature(℃)
46V (12S LiPo)	MSC 30x9.8	33%	1281	1.9	89.6	1366	14.3	0.45	64.1	68.0
		35%	1421	2.2	101.3	1433	14.0	0.49	74.1	
		37%	1575	2.5	114.8	1505	13.7	0.54	85.8	
		39%	1743	2.8	130.1	1580	13.4	0.60	99.2	
		42%	2015	3.4	156.5	1698	12.9	0.69	122.7	
		45%	2311	4.1	186.9	1818	12.4	0.79	150.2	
		48%	2626	4.8	221.2	1939	11.9	0.89	181.6	
		51%	2956	5.6	259.3	2057	11.4	1.00	216.4	
		54%	3298	6.5	301.1	2172	11.0	1.12	254.4	
		57%	3650	7.5	346.4	2282	10.5	1.23	295.2	
		60%	4008	8.6	395.1	2388	10.1	1.35	338.4	
		63%	4371	9.7	447.0	2490	9.8	1.47	383.9	
		66%	4736	10.9	502.2	2588	9.4	1.59	431.7	
		69%	5105	12.2	560.7	2683	9.1	1.71	481.8	
		72%	5477	13.5	622.6	2776	8.8	1.84	534.5	
		75%	5853	14.9	688.3	2870	8.5	1.96	590.2	
		78%	6237	16.5	758.3	2963	8.2	2.09	649.7	
		81%	6631	18.1	833.2	3059	8.0	2.23	713.7	
		84%	7040	19.8	913.9	3157	7.7	2.37	783.1	
		87%	7472	21.8	1001.6	3259	7.5	2.52	859.1	
		90%	7933	23.8	1097.4	3363	7.2	2.68	942.3	
		100%	9708	31.6	1454.1	3628	6.7	3.22	1225.3	

*The above data was measured by HOBBYWING Laboratory at room temperature 25°C, at sea level, with varying throttle input. The motor temperature is measured after running for 10 minutes at 65% throttle, for reference only.

95KV+MSC 32x10.5 (46V) Load Performance Parameters

Graph



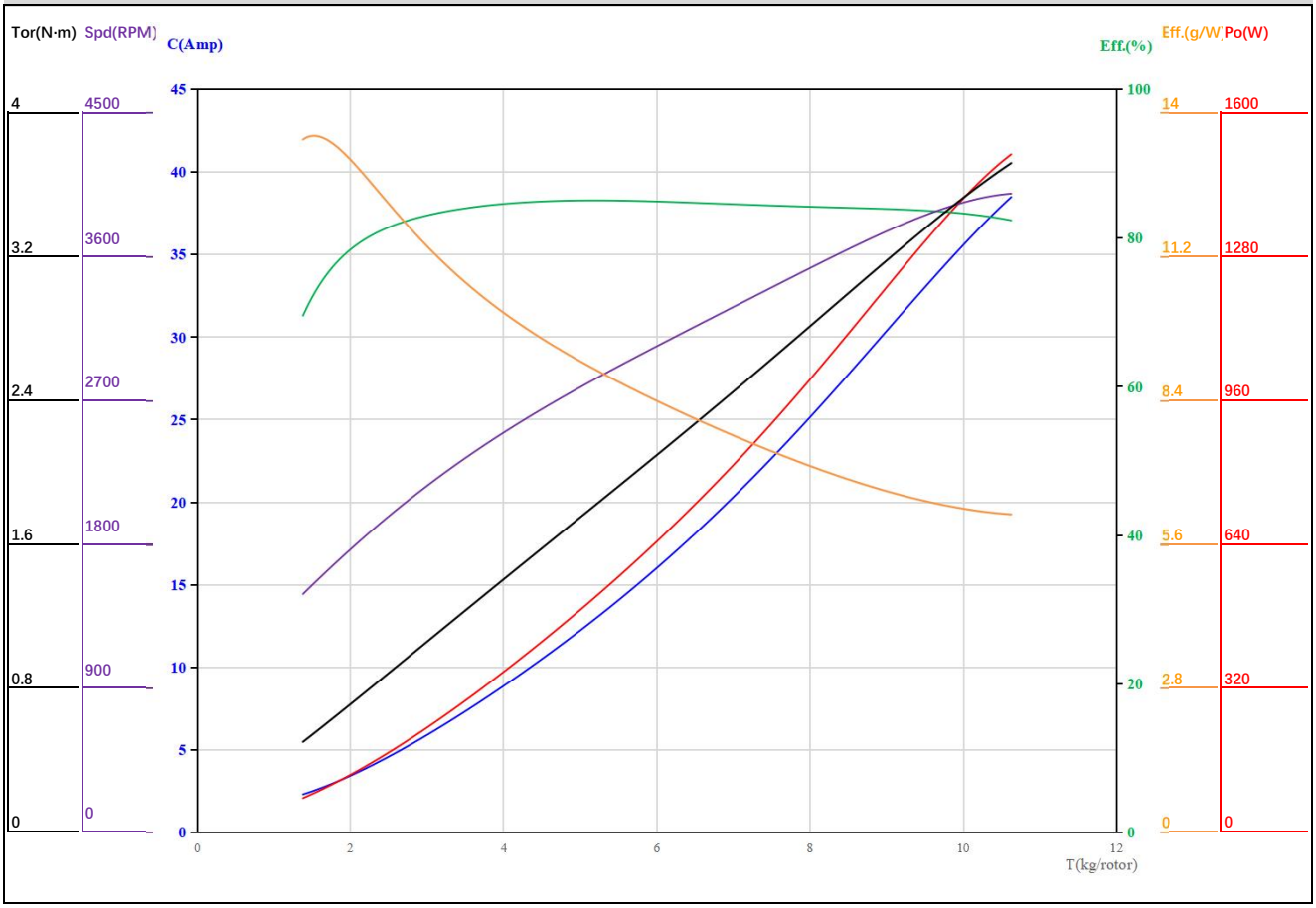
Thrust Test Data

Voltage(V)	Propeller	Throttle(%)	Thrust(g)	Current(A)	Power Input(W)	Speed(RPM)	Efficiency(g/W)	Torque(N·m)	Power Output(W)	Temperature(℃)
46V (12S LiPo)	MSC 32x10.5	33%	1654	2.5	116.5	1307	14.2	0.64	87.0	85.0
		35%	1812	2.8	130.3	1364	13.9	0.69	99.2	
		37%	1996	3.2	147.2	1428	13.6	0.76	114.1	
		39%	2202	3.6	167.3	1498	13.2	0.84	131.7	
		42%	2545	4.4	203.0	1609	12.5	0.97	162.9	
		45%	2918	5.3	245.1	1723	11.9	1.11	199.5	
		48%	3313	6.4	293.1	1836	11.3	1.25	240.8	
		51%	3722	7.5	346.3	1946	10.7	1.40	286.2	
		54%	4141	8.8	404.2	2050	10.2	1.56	334.8	
		57%	4562	10.1	466.2	2150	9.8	1.72	386.1	
		60%	4985	11.6	531.9	2243	9.4	1.87	439.6	
		63%	5406	13.1	601.2	2332	9.0	2.03	495.0	
		66%	5825	14.6	674.0	2417	8.6	2.18	552.4	
		69%	6243	16.3	750.4	2498	8.3	2.34	611.7	
		72%	6661	18.0	830.9	2579	8.0	2.49	673.5	
		75%	7082	19.9	916.2	2658	7.7	2.65	738.2	
		78%	7510	21.9	1007.2	2738	7.5	2.81	806.7	
		81%	7950	24.0	1105.4	2820	7.2	2.98	879.8	
		84%	8408	26.3	1212.5	2904	6.9	3.15	958.7	
		87%	8890	28.9	1330.5	2991	6.7	3.34	1044.4	
		90%	9405	31.7	1461.9	3079	6.4	3.53	1137.6	
		100%	11354	43.3	1992.2	3301	5.7	4.22	1458.6	

*The above data was measured by HOBBYWING Laboratory at room temperature 25°C, at sea level, with varying throttle input. The motor temperature is measured after running for 10 minutes at 65% throttle, for reference only.

110KV+MSC 29x9.5 (46V) Load Performance Parameters

Graph



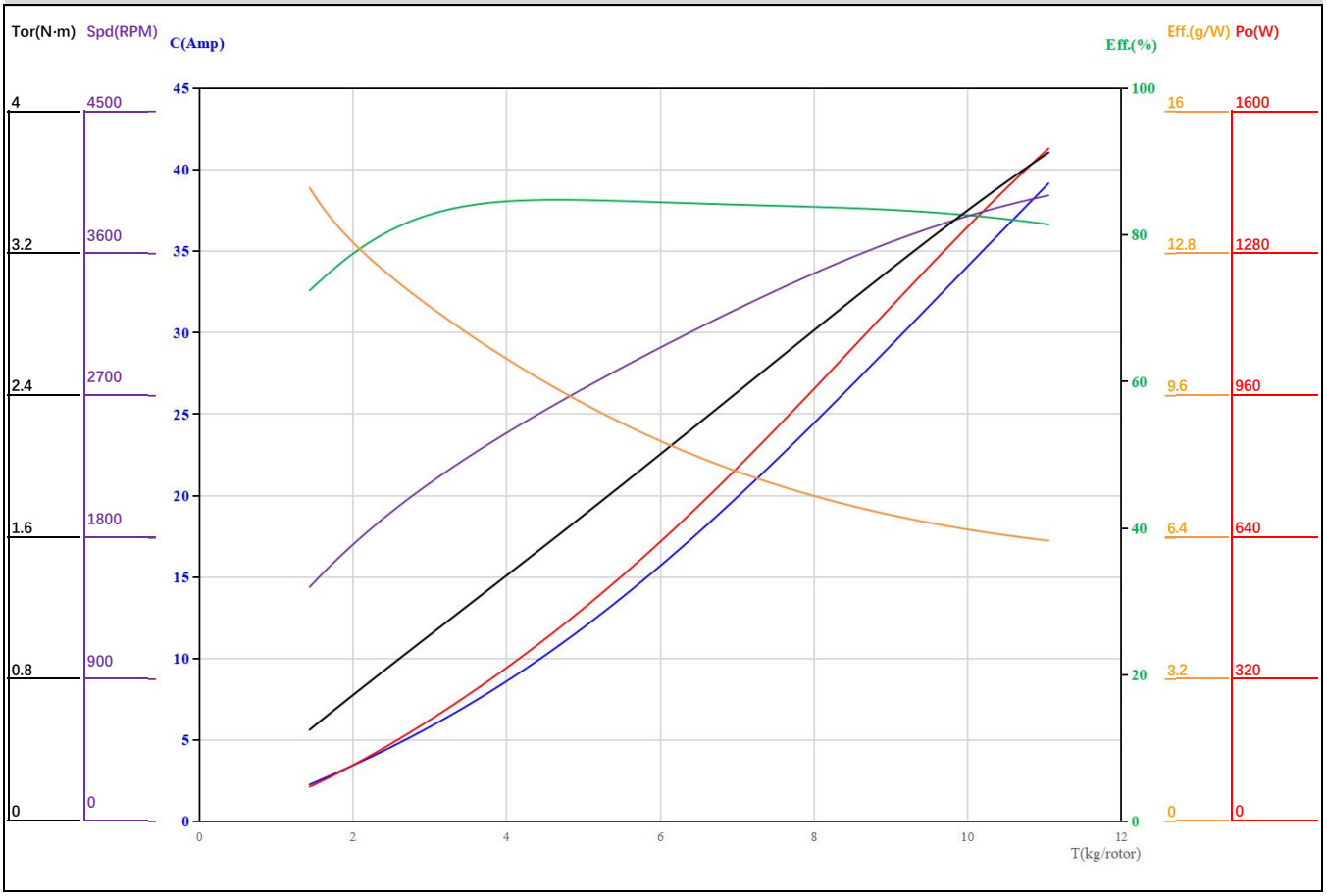
Thrust Test Data

Voltage(V)	Propeller	Throttle(%)	Thrust(g)	Current(A)	Power Input(W)	Speed(RPM)	Efficiency(g/W)	Torque(N·m)	Power Output(W)	Temperature(℃)
46V (12S LiPo)	MSC 29x9.5	33%	1420	2.4	108.5	1461	13.1	0.50	76.3	76.0
		35%	1581	2.6	120.5	1533	13.1	0.55	88.5	
		37%	1761	2.9	135.5	1612	13.0	0.61	103.0	
		39%	1957	3.3	153.5	1696	12.7	0.68	119.9	
		42%	2276	4.0	186.1	1827	12.2	0.78	149.6	
		45%	2619	4.9	224.8	1960	11.7	0.90	184.2	
		48%	2980	5.8	268.9	2092	11.1	1.02	223.3	
		51%	3353	6.9	317.7	2220	10.6	1.15	266.2	
		54%	3735	8.0	370.3	2342	10.1	1.27	312.3	
		57%	4122	9.3	426.3	2458	9.7	1.40	361.1	
		60%	4511	10.5	485.2	2567	9.3	1.53	412.2	
		63%	4902	11.9	547.2	2672	9.0	1.66	465.5	
		66%	5294	13.3	612.2	2772	8.6	1.79	520.9	
		69%	5687	14.8	680.8	2869	8.4	1.93	578.9	
		72%	6084	16.4	753.4	2965	8.1	2.06	639.8	
		75%	6487	18.0	831.0	3061	7.8	2.20	704.5	
		78%	6898	19.9	914.5	3159	7.5	2.34	773.8	
		81%	7323	21.8	1005.3	3260	7.3	2.49	849.0	
		84%	7767	24.0	1104.7	3364	7.0	2.64	931.3	
		87%	8235	26.4	1214.2	3474	6.8	2.81	1021.9	
		90%	8735	29.0	1334.9	3586	6.5	2.99	1121.6	
		100%	10624	38.5	1772.7	3870	6.0	3.60	1460.7	

*The above data was measured by HOBBYWING Laboratory at room temperature 25°C, at sea level, with varying throttle input. The motor temperature is measured after running for 10 minutes at 65% throttle, for reference only.

110KV+MSC 30x9.8 (46V) Load Performance Parameters

Graph

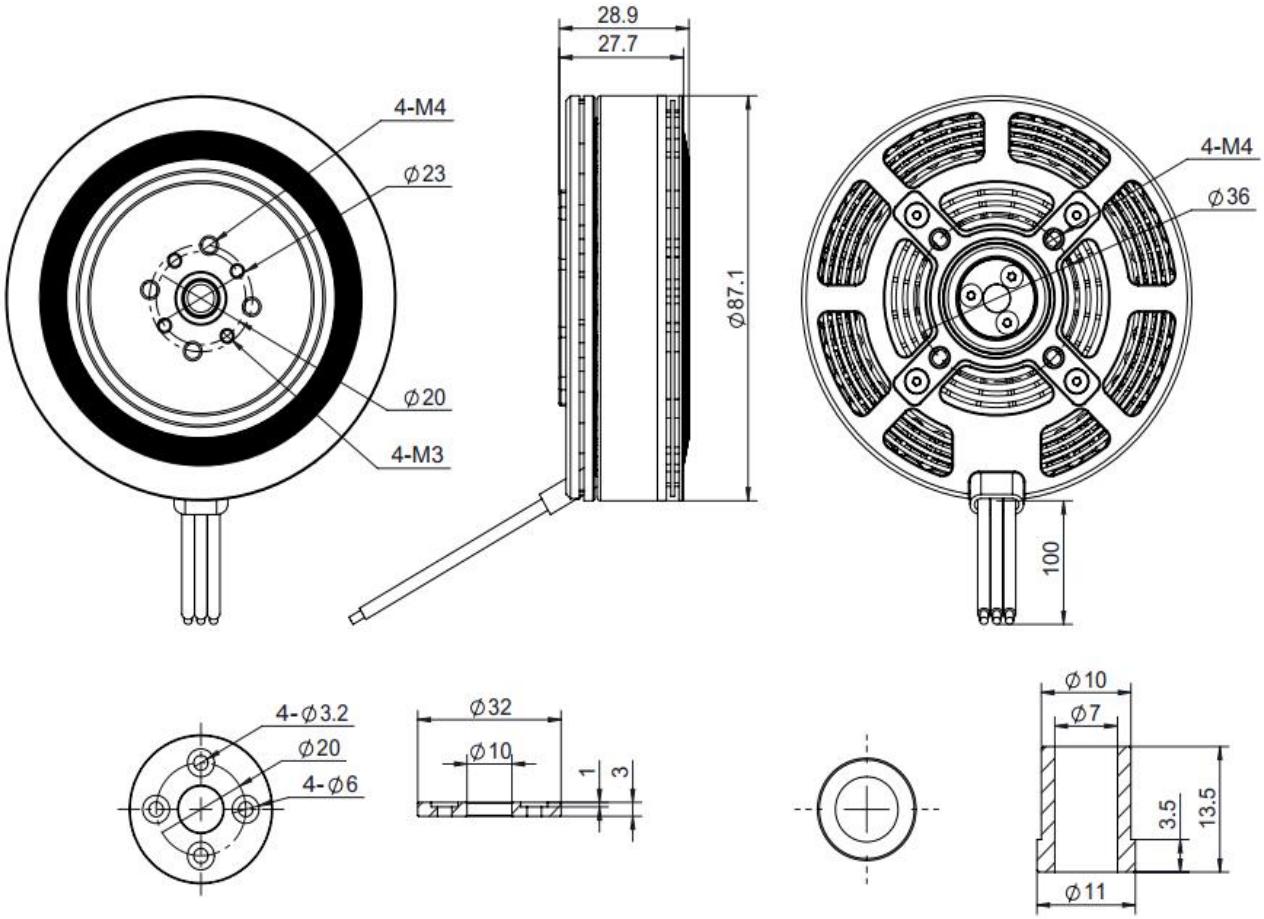


Thrust Test Data

Voltage(V)	Propeller	Throttle(%)	Thrust(g)	Current(A)	Power Input(W)	Speed(RPM)	Efficiency(g/W)	Torque(N·m)	Power Output(W)	Temperature(℃)
46V (12S LiPo)	MSC 30x9.8	33%	1468	2.3	106.8	1454	13.7	0.51	77.7	81.0
		35%	1614	2.6	120.5	1525	13.4	0.56	89.4	
		37%	1787	3.0	137.2	1606	13.0	0.62	103.9	
		39%	1984	3.4	156.6	1692	12.7	0.68	121.1	
		42%	2313	4.1	190.4	1827	12.2	0.79	151.6	
		45%	2672	5.0	229.2	1962	11.7	0.91	186.9	
		48%	3051	5.9	273.0	2093	11.2	1.03	226.4	
		51%	3441	7.0	321.2	2219	10.7	1.16	269.5	
		54%	3837	8.1	373.6	2338	10.3	1.29	315.5	
		57%	4236	9.3	429.9	2452	9.9	1.42	364.2	
		60%	4634	10.6	489.8	2560	9.5	1.55	415.4	
		63%	5031	12.0	553.1	2665	9.1	1.68	468.9	
		66%	5427	13.5	620.0	2767	8.8	1.81	524.9	
		69%	5825	15.0	690.5	2866	8.4	1.94	583.7	
		72%	6228	16.6	765.2	2964	8.1	2.08	645.7	
		75%	6639	18.3	844.7	3062	7.9	2.22	711.7	
		78%	7065	20.2	929.8	3161	7.6	2.36	782.2	
		81%	7509	22.2	1021.7	3260	7.3	2.51	858.2	
		84%	7979	24.4	1121.6	3360	7.1	2.67	940.4	
		87%	8480	26.7	1230.6	3461	6.9	2.84	1029.7	
		90%	9019	29.3	1349.9	3561	6.7	3.02	1126.1	
		100%	11051	39.2	1803.9	3843	6.1	3.65	1469.0	

*The above data was measured by HOBBYWING Laboratory at room temperature 25°C, at sea level, with varying throttle input. The motor temperature is measured after running for 10 minutes at 65% throttle, for reference only.

Dimension Figure



Recommended Application Combinations

Motor	M8110 HighProt-95/110KV
Propeller	MSC 29x9.5/MSC 30x9.8/MSC 32x10.5
ESC	XRotor Pro H60A 14S
Battery	12S LiPo
Takeoff Weight / Rotor	3.0~4.0 kg
Takeoff Weight of Quadrotor	12.0~16.0 kg