

VL8022 Propulsion System Specifications

VL8022propulsion system is recommended for (4 arms) VTOL
with a take-off weight of 40 kg.

一、Parameters

Motor Parameters	Item No.	VL8022
	KV (RPM/V)	170
	Voltage (V)	12S
	Idle Current (A/15V)	≤2.5
	Idle RPM (RPM/15V)	2800±10%
	Interphase Resistance (mΩ/25°C)	30±10%
	Max. Current (A)	135
	Three-phase Wires (mm)	Silicone 13#-1000±5
	Encoder Wire (mm) (Measured from the center of the motor)	Shielded Wire - Black-24AWG-5C-210 ±10mm-M6 aviation connector
	Ingress protection	IPX5
	Motor Weight (g)	785 (incl. wires) ±10
	Ambient Temperature (°C)	-30 ~ 55
Temperature Monitoring	Thermistor (optional as per FC)	
	Item No.	V150A
	Throttle Range (us)	1100-1940 (Fixed)
	Protocol	DRONECAN/UVACAN

ESC	Control Methods	PWM/CAN
Parameters	Propeller Locking Method	Electronic
	Max. Voltage (V)	60
	Max. Continuous Current (A)	70 (Under certain heat dissipation conditions)
	Max. Current (A/10s)	160 (Under certain heat dissipation conditions)
	Ambient Temperature (°C)	-30 ~ 65
	Ambient Humidity (%)	15 ~ 85
	Storage Temperature (°C)	-40 ~ 65
	Storage Humidity (%)	15 ~ 85
	Standby Power Consumption (mA)	≤50
	Throttle Response Speed (ms)	300
	Throttle Refresh Frequency (Hz)	50~500
	Input Cables (mm)	Silicone wire - red/black-10AWG-200±10mm
	Output Cables (mm)	Silicone wire - orange-10AWG-150±10mm
	Signal wires (mm)	Shielded cable - Black-OD4.2-5C-500±10mm -JP-3P*2-Black blank white - Green yellow gray
	Encoder wires (mm)	Shielded wire - black-24AWG-5C-450 ±10-M6 aviation connector
	Length (mm)	116±1.5
	Width (mm)	49±1.5
	Height (mm)	30.9±1.5

	Weight (g)	295±5
Propeller	Item No.	VZ29
	Item No. (mm)	736
Parameters	Weight (g)	90±5

二、 Test report

VL8022 KV170+V150A+VZ29						Ambient temperature	25°C
Throttle	Voltage (V)	Current (A)	Power (W)	RPM (RPM)	Torque (N·m)	Thrust (g)	Efficiency (g/W)
40	44.41	10.56	469	2366	1.52	4517	9.63
42	44.38	12.29	545	2494	1.68	5026	9.22
44	44.34	14.17	628	2620	1.86	5554	8.84
46	44.31	16.26	720	2744	2.03	6094	8.46
48	44.26	18.52	819	2866	2.22	6664	8.13
50	44.22	20.93	926	2986	2.41	7239	7.82
52	44.18	23.56	1041	3103	2.61	7843	7.54
54	44.13	26.35	1163	3218	2.81	8446	7.26
56	44.07	29.34	1293	3331	3.02	9060	7.01
58	44.02	32.52	1432	3441	3.23	9706	6.78
60	43.96	35.89	1578	3549	3.44	10346	6.56
62	43.89	39.43	1731	3654	3.66	10993	6.35
64	43.83	43.13	1890	3757	3.87	11629	6.15
66	43.75	46.99	2056	3857	4.09	12266	5.97
68	43.67	51.07	2230	3955	4.30	12919	5.79
70	43.60	55.31	2411	4047	4.52	13561	5.62

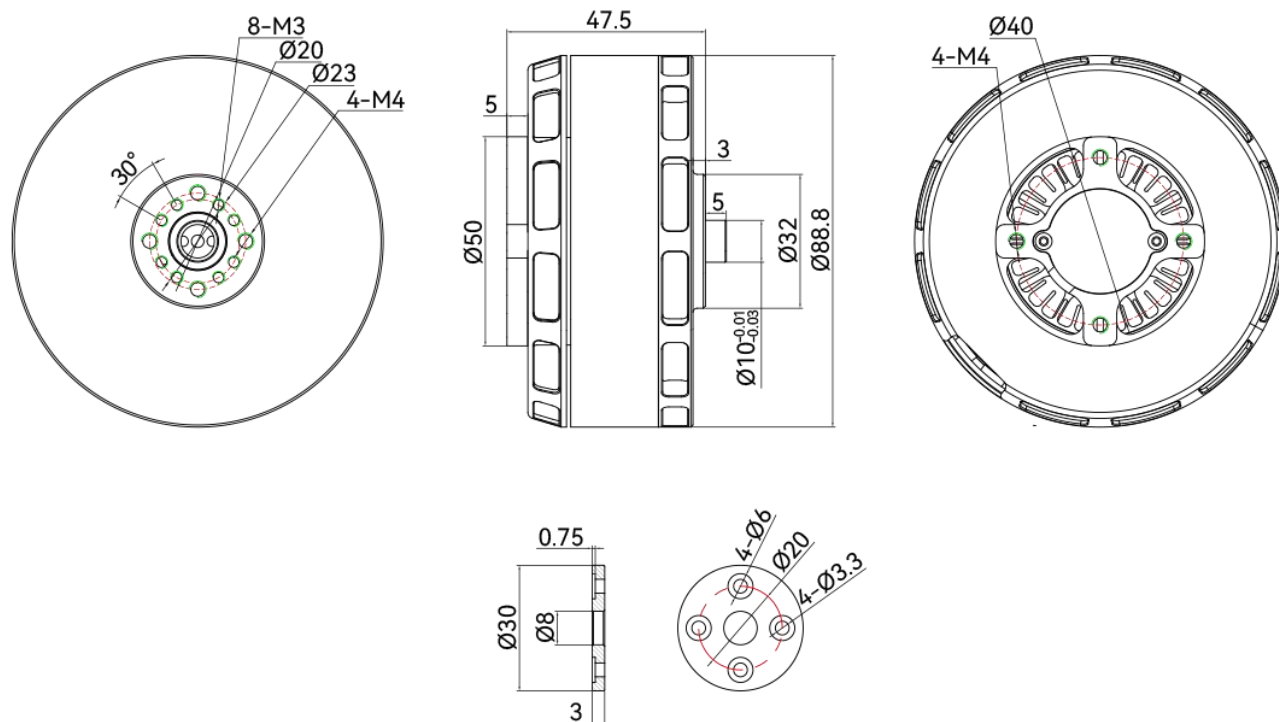
80	43.26	73.74	3190	4388	5.37	16064	5.04
90	42.74	99.88	4268	4733	6.33	18875	4.42
100	42.33	119.59	5062	4916	6.84	20308	4.01

VL8022 KV170+V150A+VZ29						Ambient temperature	25°C
Throttle	Voltage (V)	Current (A)	Power (W)	RPM (RPM)	Torque (N·m)	Thrust (g)	Efficiency (g/W)
40	50.07	13.18	660	2654	1.91	5672	8.59
42	50.04	15.36	769	2795	2.12	6305	8.20
44	50.01	17.75	888	2933	2.34	6973	7.85
46	49.97	20.33	1016	3069	2.56	7665	7.55
48	49.92	23.14	1155	3201	2.79	8356	7.23
50	49.88	26.16	1305	3332	3.03	9068	6.95
52	49.82	29.46	1468	3460	3.28	9805	6.68
54	49.75	33.09	1646	3589	3.53	10574	6.42
56	49.68	36.84	1831	3709	3.79	11335	6.19
58	49.61	40.78	2023	3827	4.04	12094	5.98
60	49.54	44.87	2222	3941	4.29	12802	5.76
62	49.46	49.19	2433	4052	4.54	13543	5.57
64	49.38	53.81	2657	4157	4.81	14310	5.39

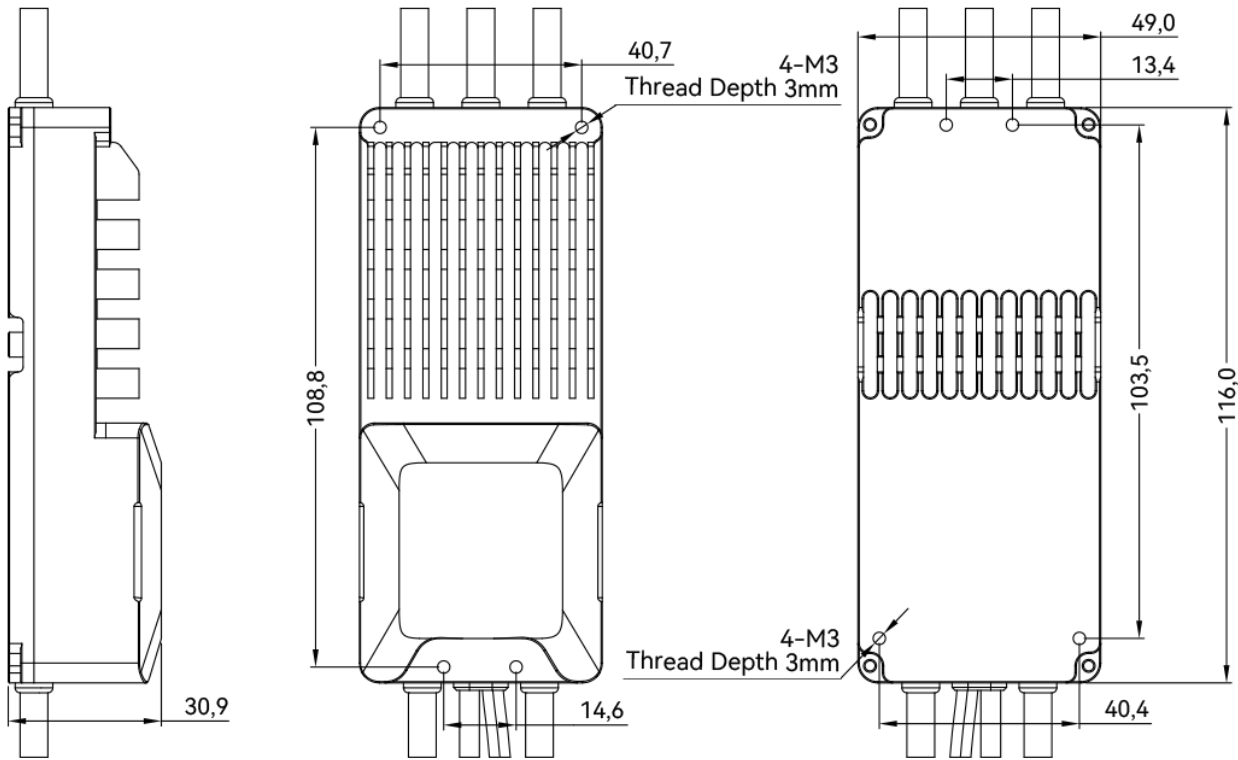
66	49.30	58.50	2884	4259	5.06	15022	5.21
68	49.20	63.48	3123	4359	5.31	15758	5.05
70	49.10	68.63	3370	4454	5.55	16468	4.89
80	48.53	95.19	4620	4834	6.63	19564	4.23
90	47.95	123.70	5932	5086	7.41	21820	3.68
100	47.70	136.67	6519	5140	7.56	22268	3.42

The above data are measured by the professional bench of the laboratory for reference
for model selection only.

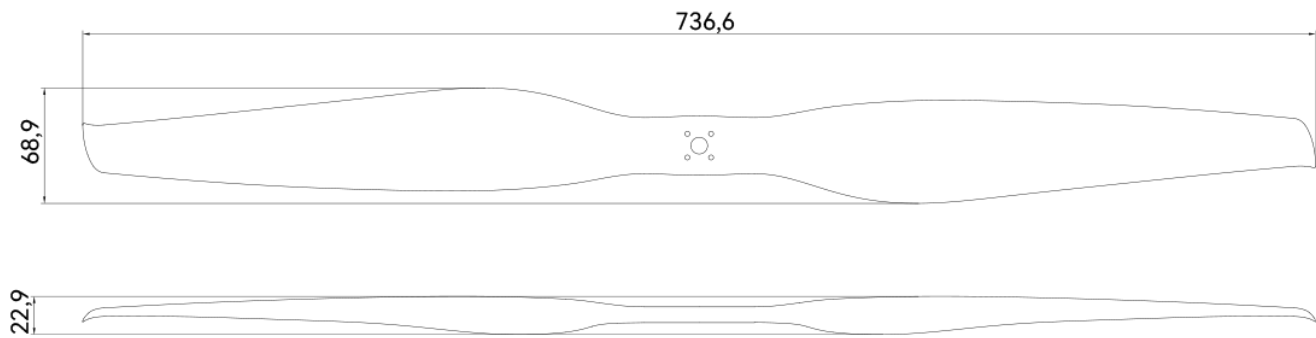
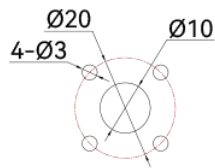
三、 Drawings (mm)



【MOTOR】



【ESC】



【PROPELLER】