

VL8020 Propulsion System Specifications

VL8020propulsion system is recommended for (4 arms) VTOL
with a take-off weight of 35 kg.

一、Parameters

Motor Parameters	Item No.	VL8020
	KV (RPM/V)	170
	Voltage (V)	12S
	Idle Current (A/15V)	≤2.4
	Idle RPM (RPM/15V)	2800±10%
	Interphase Resistance (mΩ/25°C)	32±10%
	Max. Current (A)	116
	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)	735 (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.	VZ28
	Item No. (mm)	711
Parameters	Weight (g)	80±5

二、 Test report

VL8020 KV170+V150A+VZ28						Ambient temperature	25°C
Throttle	Voltage (V)	Current (A)	Power (W)	RPM (RPM)	Torque (N·m)	Thrust (g)	Efficiency (g/W)
40	44.40	8.87	394	2357	1.26	3783	9.61
42	44.37	10.21	453	2473	1.40	4186	9.24
44	44.35	11.71	519	2589	1.53	4620	8.89
46	44.31	13.30	589	2703	1.67	5066	8.59
48	44.28	14.98	663	2815	1.82	5498	8.29
50	44.25	16.84	745	2924	1.97	5972	8.01
52	44.20	18.78	830	3032	2.12	6436	7.75
54	44.16	20.88	922	3139	2.28	6923	7.51
56	44.12	23.13	1021	3245	2.44	7426	7.28
58	44.07	25.52	1124	3348	2.60	7938	7.06
60	44.02	28.14	1239	3454	2.78	8469	6.84
62	43.96	30.89	1358	3555	2.96	9016	6.64
64	43.89	33.73	1481	3652	3.13	9552	6.45
66	43.84	36.77	1612	3748	3.30	10092	6.26
68	43.76	39.91	1746	3842	3.48	10627	6.09
70	43.69	43.15	1885	3932	3.65	11158	5.92

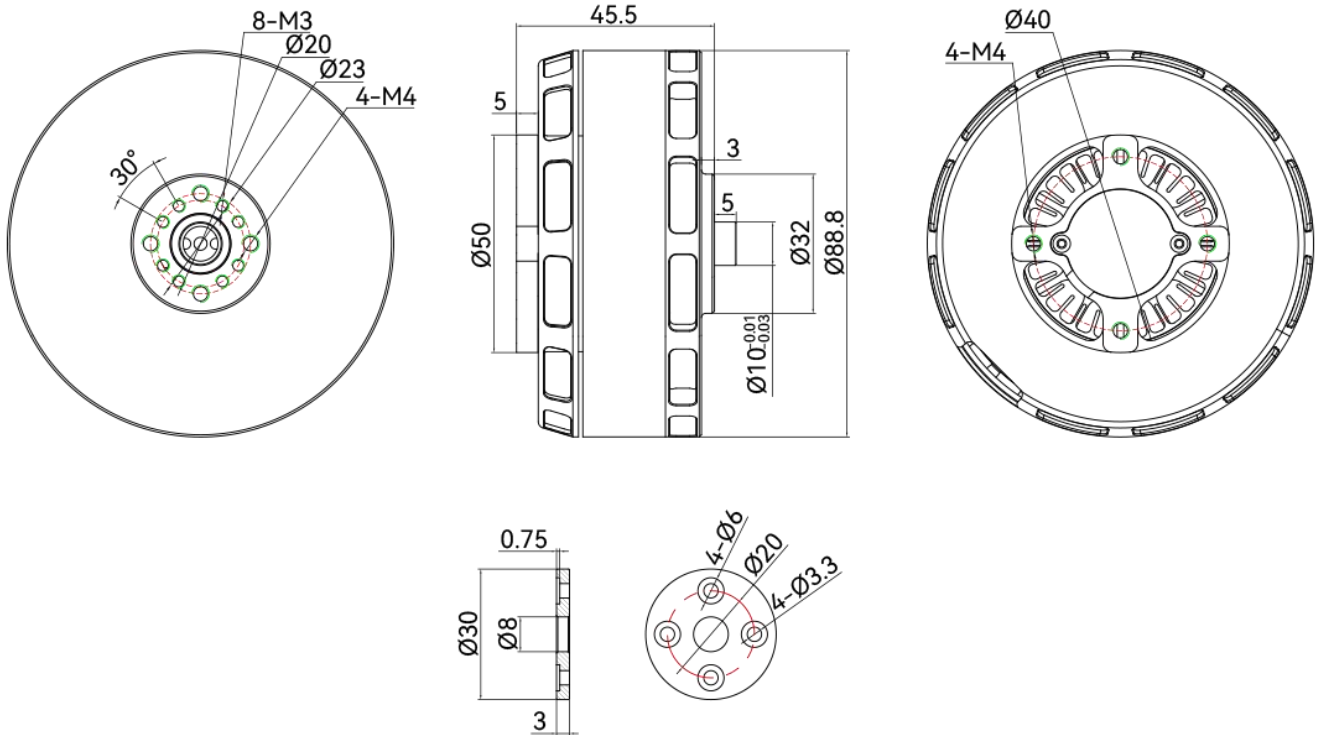
80	43.28	61.99	2683	4361	4.56	13892	5.18
90	42.71	84.09	3592	4715	5.39	16422	4.57
100	42.11	109.61	4616	4964	6.02	18321	3.97

VL8020 KV170+V150A+VZ28						Ambient temperature	25°C
Throttle	Voltage (V)	Current (A)	Power (W)	RPM (RPM)	Torque (N·m)	Thrust (g)	Efficiency (g/W)
40	49.88	10.82	540	2629	1.57	4756	8.81
42	49.85	12.43	620	2755	1.73	5243	8.46
44	49.82	14.18	706	2879	1.90	5750	8.14
46	49.78	16.08	800	3003	2.07	6282	7.85
48	49.75	18.14	902	3123	2.24	6823	7.56
50	49.71	20.37	1012	3242	2.43	7386	7.30
52	49.67	22.81	1133	3358	2.62	7984	7.05
54	49.61	25.37	1258	3473	2.81	8579	6.82
56	49.56	28.14	1395	3586	3.01	9189	6.59
58	49.50	31.00	1535	3696	3.21	9791	6.38
60	49.44	34.19	1690	3807	3.42	10431	6.17
62	49.37	37.43	1848	3913	3.62	11059	5.98
64	49.30	40.87	2015	4014	3.83	11680	5.80

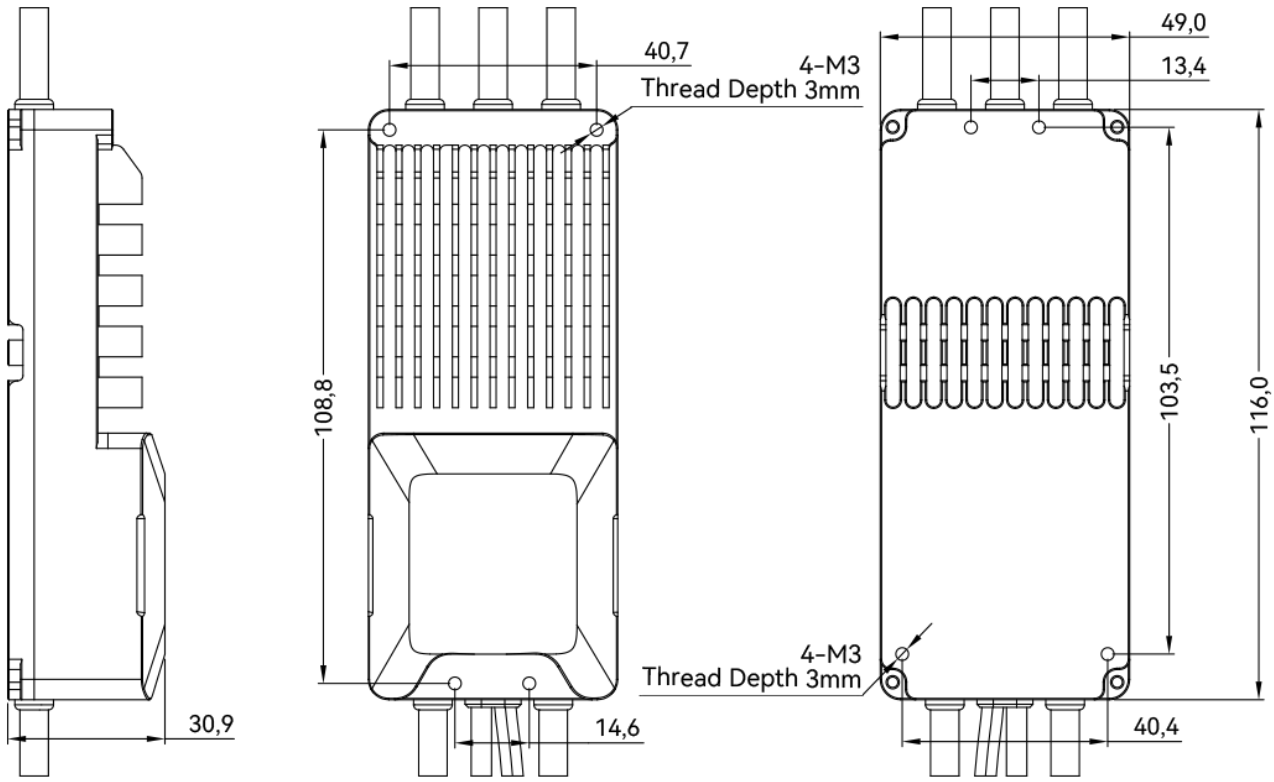
66	49.23	44.43	2187	4114	4.03	12307	5.63
68	49.15	48.11	2365	4210	4.23	12916	5.46
70	49.08	51.97	2550	4304	4.43	13528	5.30
80	48.61	73.08	3553	4712	5.38	16375	4.61
90	48.10	95.83	4610	4994	6.11	18594	4.03
100	47.64	115.38	5496	5122	6.48	19679	3.58

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

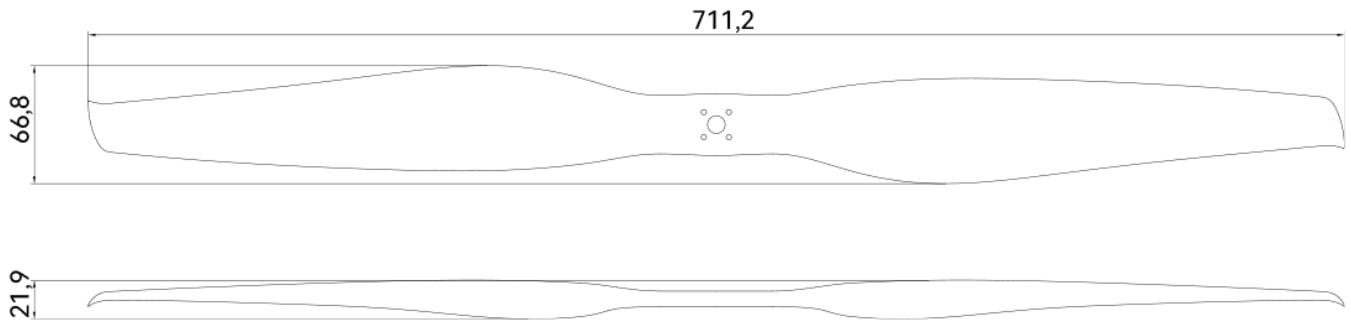
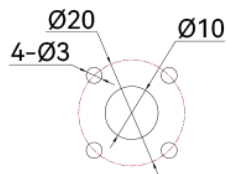
三、 Drawings (mm)



【MOTOR】



【ESC】



【PROPELLER】