

VL6013 Propulsion System Specifications

VL6013propulsion system is recommended for (4 arms) VTOL

with a take-off weight of 20~22 kg.

一、Parameters

Motor Parameters	Item No.	VL6013
	KV (RPM/V)	210
	Voltage (V)	12S
	Idle Current (A/15V)	≤1.5
	Idle RPM (RPM/15V)	3230±10%
	Interphase Resistance (mΩ/25℃)	50±10%
	Max. Current (A)	75
	Three-phase Wires (mm)	Silicone 14#-600±5
	Encoder Wire (mm) (Measured from the center of the motor)	Shielded Wire - Black-24AWG-5C-110± 10mm-M6 aviation connector
	Ingress protection	IPX5
	Motor Weight (g)	388 (incl. wires) ±10
	Ambient Temperature (℃)	-30 ~ 55
	Temperature Monitoring	Thermistor (optional as per FC)
	Item No.	V80A
	Throttle Range (us)	1100-1940 (Fixed)

ESC Parameters	Protocol	DRONECAN/UVACAN
	Control Methods	PWM/CAN
	Propeller Locking Method	Electronic
	Max. Voltage (V)	60
	Max. Continuous Current (A)	40 (Under certain heat dissipation conditions)
	Max. Current (A/10s)	80 (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-12AWG-180±10mm
	Output Cables (mm)	Silicone wire - orange-14AWG-110±10
	Signal wires (mm)	Shielded cable - Black-OD4.2-5C-450±10mm -JP-3P*2-Black blank white - Green yellow gray
	Encoder wires (mm)	Shielded wire - black-26AWG-5C-450 ±10-M6aviation connector
	Length (mm)	84±1.5
	Width (mm)	34.4±1.5

	Height (mm)	19±1.5
	Weight (g)	110±5
Propeller Parameters	Item No.	P22
	Item No. (mm)	559
	Weight (g)	45±2

二、Test report

VL6013 KV210+V80A+P22						Ambient temperature	25°C
Throttle	Voltage (V)	Current (A)	Power (W)	RPM (RPM)	Torque (N·m)	Thrust (g)	Efficiency (g/W)
40	45.02	5.76	259.30	3342.73	0.60	2384	9.19
42	45.06	6.66	300.19	3512.40	0.67	2649	8.83
44	45.08	7.65	344.69	3676.00	0.74	2950	8.56
46	45.10	8.67	390.77	3840.50	0.80	3228	8.26
48	45.12	9.87	445.11	4000.80	0.88	3562	8.00
50	45.13	11.06	498.93	4165.18	0.95	3841	7.70
52	45.15	12.45	562.22	4332.40	1.03	4203	7.47
54	45.15	13.92	628.39	4493.20	1.12	4551	7.24
56	45.15	15.49	699.25	4648.00	1.21	4907	7.02
58	45.15	17.14	773.82	4804.90	1.29	5250	6.78
60	45.15	18.97	856.50	4961.45	1.39	5624	6.57
62	45.13	20.96	946.02	5126.00	1.48	6022	6.37
64	45.12	22.99	1037.44	5274.00	1.58	6411	6.18
66	45.12	25.23	1138.39	5422.70	1.68	6827	6.00
68	45.11	27.58	1244.22	5573.60	1.78	7241	5.82
70	45.09	30.18	1361.04	5729.91	1.89	7670	5.63

80	44.97	45.95	2066.41	6468.09	2.47	9973	4.83
90	44.62	77.83	3472.63	7112.60	3.04	12189	3.51
100	44.56	77.35	3447.03	7194.73	3.13	12517	3.63

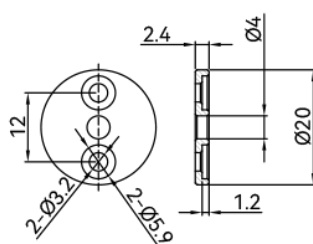
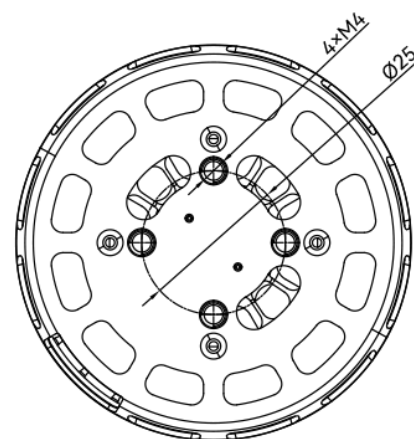
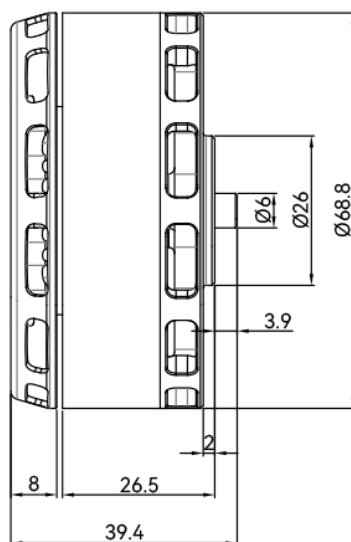
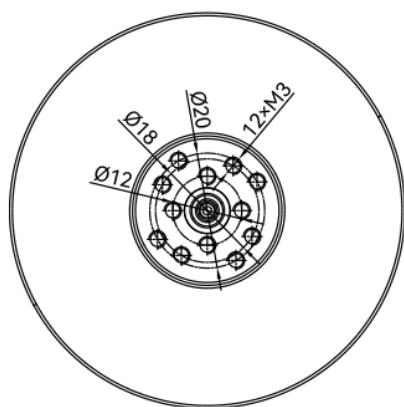
VL6013 KV210+V80A+P22						Ambient temperature	25°C
Throttle	Voltage (V)	Current (A)	Power (W)	RPM (RPM)	Torque (N·m)	Thrust (g)	Efficiency (g/W)
40	50.82	7.28	369.92	3748.20	0.76	3099	8.38
42	50.86	8.39	426.69	3932.80	0.84	3431	8.04
44	50.89	9.68	492.57	4119.00	0.93	3810	7.74
46	50.91	10.98	559.04	4299.90	1.02	4174	7.46
48	50.93	12.42	632.60	4484.70	1.11	4547	7.19
50	50.96	14.00	713.41	4662.80	1.20	4939	6.93
52	50.97	15.79	804.87	4846.00	1.31	5363	6.66
54	50.99	17.65	899.79	5015.60	1.42	5805	6.45
56	51.00	19.61	1000.22	5189.20	1.52	6233	6.23
58	51.00	21.76	1109.80	5359.90	1.64	6680	6.02
60	51.01	24.08	1228.32	5536.80	1.75	7163	5.83
62	51.01	26.66	1360.08	5710.60	1.88	7661	5.63
64	51.01	29.28	1493.32	5872.60	1.99	8139	5.45

66	50.99	32.10	1636.88	6040.60	2.12	8622	5.27
68	50.98	35.38	1803.39	6207.90	2.25	9179	5.10
70	50.97	38.66	1970.18	6371.20	2.38	9690	4.92
80	50.70	61.65	3125.40	7175.20	3.12	12526	4.01
90	50.71	69.88	3543.06	7223.60	3.18	12759	3.60
100	50.63	69.90	3538.89	7310.80	3.27	13084	3.70

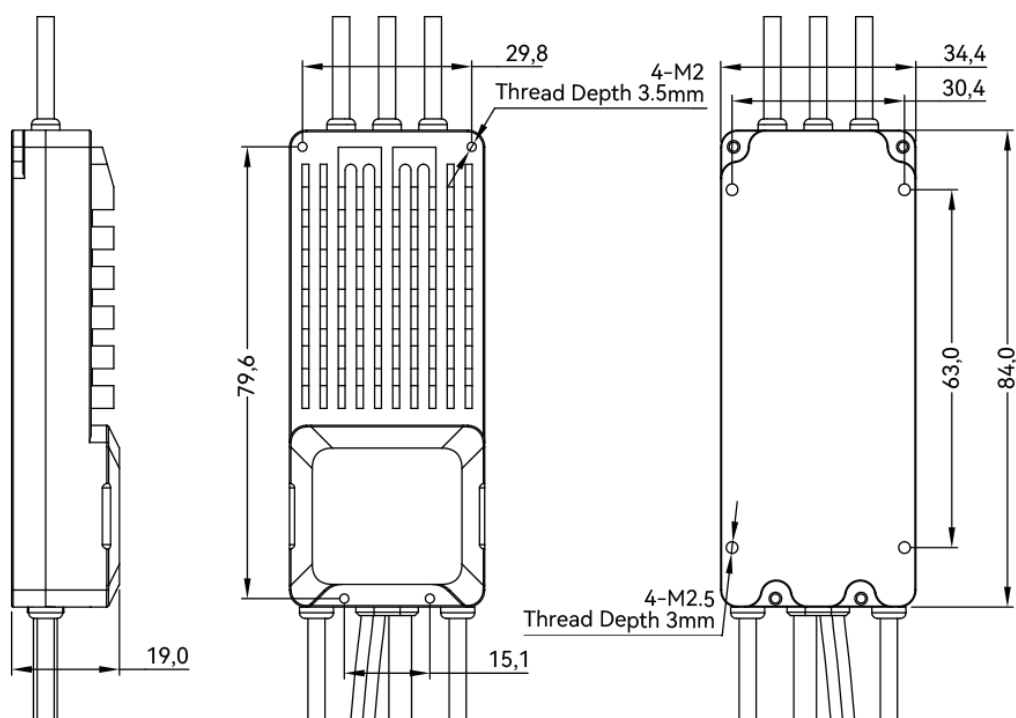
The above data are measured by the professional bench of the laboratory for reference

for model selection only.

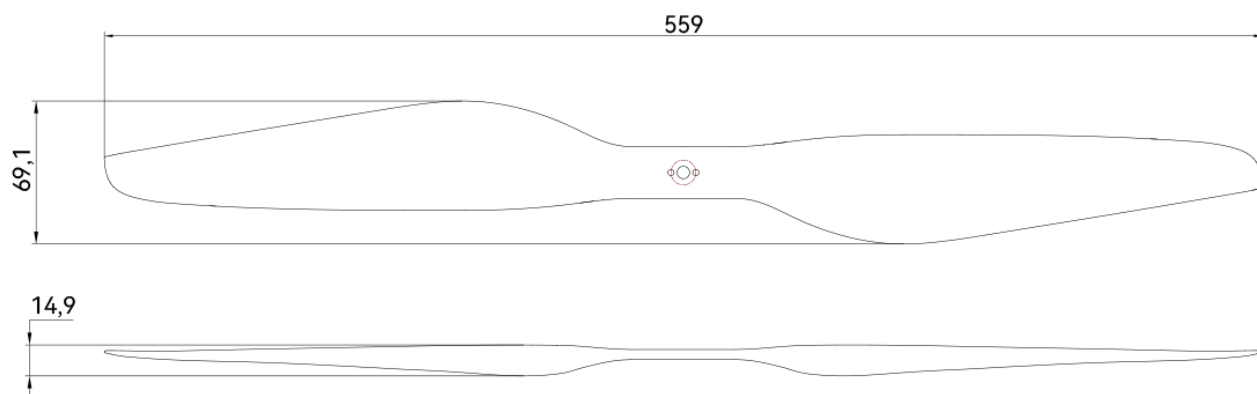
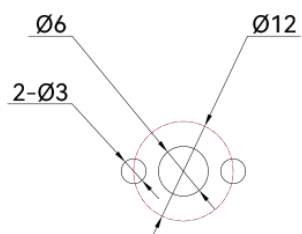
三、 Drawings (mm)



【MOTOR】



【ESC】



【PROPELLER】