

Stanton VTOL 1.0

Project designer: Drew Britten

Originator: Tom Stanton

[Sources](#)

Vessel Dimensions

Motor wheelbase	1140mm
Wingspan	1000mm
Length	820mm
Vessel mass	962g
Wing Airfoil	NACA 4412
Dihedral wing angle	plus 8 degrees
Pitch wing angle	plus 3 degrees
Propeller	Gemfan 3B 6042



Battery test sample	Mass
14.8V (4S) 2200mAh	238g

Performance Estimation (Drone 1.0)

Power at 50% throttle	266 Watts
Total thrust at 50% throttle	1628 g
Total vessel mass	1200 g
Vessel mass	962 g
Battery mass	238 g
Battery capacity	2200 mAh
Amps at 50% throttle	18 Amps ave.
Flight Time	7.3 minutes

Max load estimation

Max Load Capacity	1500 g
Max Loaded Flight Time	2 minutes

[Tmotor F80 Gemfan 3B 6042 Dynamometer](#)



PWM	10	20	30	40	50	60	70	80	90	100
V(v)	16.84	16.78	16.73	16.56	16.43	16.21	15.91	15.58	15.33	14.92
I(A)	0	0.79	2.55	5.1	8.73	11.96	14.87	20.39	32.79	38.82
P(W)	0	13.2	42.68	84.45	143.34	193.86	236.61	317.58	502.67	579.14
WT(g)	43	164	346	573	814	1064	1308	1582	1822	1967
EFF	0	12.43	8.11	6.79	5.68	5.49	5.53	4.98	3.62	3.4