

Design Fundamentals:

Battery: (continuous / max. C) ThunderPower 5000SX (22/50C)			# serial: 12 S	# parallel: 1 P	Capacity: 5000 mAh	Resistance: 0.0026 Ohm	Volt per Cell: 3.7 V	Weight per Cell: 122 g
Controller: Phönix 110HV			Resistance: 0.001 Ohm	Continuous Current: 110 A	max. Current: 110 A	Weight: 150 g		
Motor: Manufacturer - Type (Kv in rpm) Mega Motor Custom			Kv (w/o torque): 850 rpV	Resistance: 0.012 Ohm	Idle Current: 1.4 A	Limit (up to 20s): 100 A	Case Length: 86 mm	Weight: 450 g
Ducted Fan: Aeronaut TurboFan 4000 (120mm)			thrust duct for: 100 % FSA	Flight Speed: 50 km/h	Gear: 1.00	<input type="button" value="calculate"/>		

Approx. Values:

Warning:

* the prediction of the motor case temperature is critical (>80°C/180°F). Please check! ** max. current over the limit of the motor (100A). Please verify the limits (current, power, rpm) defined by the

Battery:	Load 20.5 C	Voltage 41.2 V	Rated Voltage: 44.4 V	Flight Time*: 2.93 min	mixed Flight Time: 4.98 min	Weight: 1464 g
Motor:	max. Current: 102.411 A	Voltage: 41.1 V	Revolutions: 33892 rpm	el. Power (In): 4209.33 W	mech. Power (out): 4025.93 W	Efficiency: 95.6 %
Optimal Efficiency:	Strom: 70.99 A	Voltage: 43.2 V	Revolutions: 35992 rpm	el. Power (In): 3066.42 W	mech. Power (out): 2945.47 W	Efficiency: 96.056 %
Ducted Fan:	Static Thrust: 7040 g =	69.06 N	Thrust in Flight: 5925 g	Jet Speed: 316 km/h =	87.7 m/s	Revolutions: 33892 rpm
Entire Drive:	Weight: 2270.4 g (Battery + Controller + Motor + 10%)	Fan Efficiency: 1.67 g/W				Efficiency: 67.9 %

Important Note:

Before flight recheck the max. current! If your Current, el. Power or RPM are over the manufacturers limits **your motor, controller and/or battery may take damage!** Thrust reduction due long ducting are **not** considered!

for printing use Landscape format
* Flight Time @ Full Power
** Testdata with reduced accuracy

Motor Data:

mech. Power [W], Efficiency [%], wast Power [W],
Revolutions [rpm], Motor Case Temperature Prediction [°C]

Motor Cooling:
poor

Power Scale:
automatic

