eflight.ch

all Data without guarantee!
Accuracy +/-12%

e-Motor Calculator for Ducted Fans

The Fan Calculator works with JavaScript.,
Therefore you have to turn it on in your Browser.

S4A

Deutsch

Design Fundamentals:

					Field Elevation: 500 m ASL	Air Temp: 25 °C	Pressure (QNH): 1013.25 hPa	
Battery: (continuous / max. C) ThunderPower 5000SX (22/50C)	# seriall: 10 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 Lenght: 86 mm	Weight: 450 g		
Ducted Fan: Aeronaut TurboFan 4000 (120mm)	thrust duct for: 100 % FSA		Flight Speed: 50 km/h		Gear: 1.00	calculate		

Approx. Values:

Warning:

Battery:	Load: **15.1** C	Voltage: **35.04** V	Rated Voltage: 37 V	Flight Time*: 3.98 min	mixed Flight Time: 6.76 min	Weight: 1220 g
Motor:	max. Current: **75.456** A	Voltage: 34.96 V	Revolutions: 28949 rpm	el. Power (In): 2638.14 W	mech. Power (out): 2520.87 W	Efficiency: 95.6 %
Optimal Efficiency:	Strom: 64.88 A	Voltage: 36.08 V	Revolutions: 30004 rpm	el. Power (In): 2340.72 W	mech. Power (out): 2239.7 W	Efficiency: 95.684 %
Ducted Fan:	Static Thrust: **5164** g = 50.66 N		Thrust in Flight: **4208** g	Jet Speed: 270 km/h = 75.1 m/s		Revolutions: 28949 rpm
Entire Drive:	Weight: 2002 g (Battery + Controller + Motor + 10%)				Fan Efficiency: **1.96** g/W	Efficiency: **67.9** %

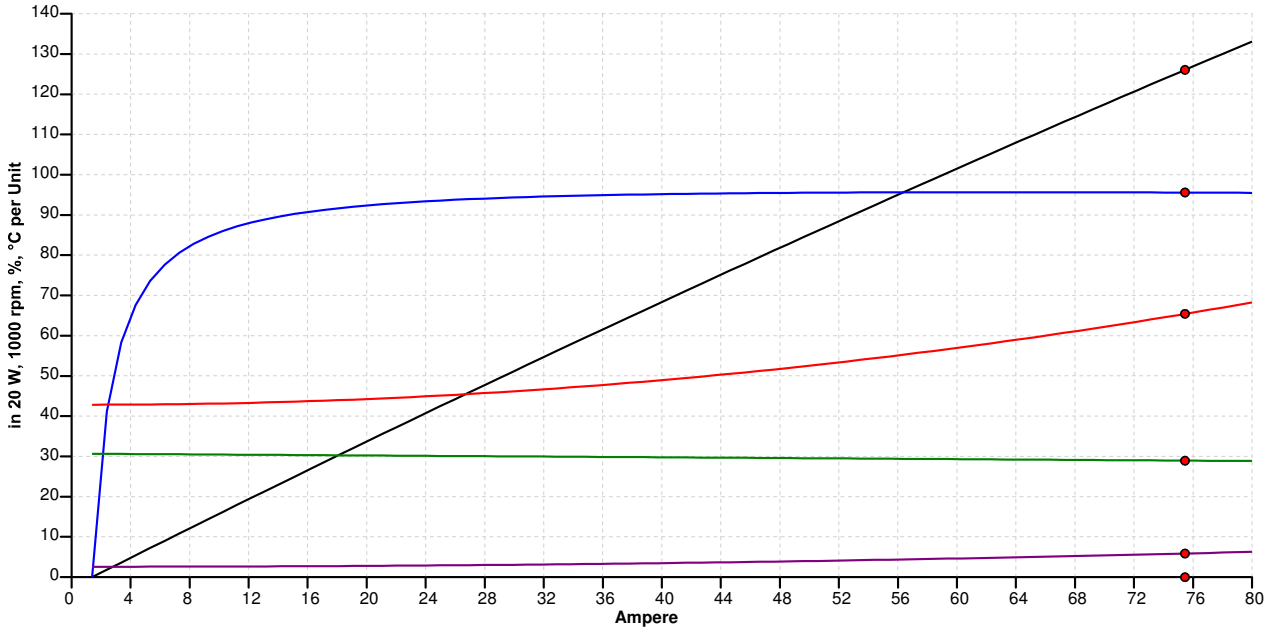
Important Note:
Before flight recheck the max. current! If your Current, el. Power or RPM are over the manufacturers limits **your motor, controller and/or battery may take damage!** Thrust reduction due long ducting are **not** considered!

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



V 3.14, 30.04.09 / Data: 30.04.09