S4A

all Data without guarantee!
Accuracy +/-10%

eCalc

propCalc - Calculator for Propeller

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

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Design Fundamentals:

metric units

Model Weight: 1500 g incl. Drive

Field Elevation: 500 m ASL | Air Temp: 25 °C | Pressure (QNH): 1013 hPa

Battery: (continuous / max. C) - charge state: LiPo 4000mAh - 30/45C | full

serial: 6 S | # parallel: 1 P | Capacity: 4000 mAh | Resistance: 0.0043 Ohm | Volt per Cell: 3.7 V | Weight per Cell: 113 g

Controller: max 100A

Resistance: 0.0025 Ohm | Continuous Current: 100 A | max. Current: 100 A | Weight: 130 g | Motor Weight: 305 g

Motor: Manufacturer - Type (Kv in rpm/V): Scorpion | Custom

Kv (w/o torque): 910 rpm/V | Resistance: 0.01 Ohm | no-load Current: 1.92 A @ 10 V | Limit (up to 20s): 1400 W | # mag. Poles: 14 | Case length: 41 mm

Propeller: Type - yoke twist: APC Electric E | 0°

Diameter: 10 inch | Pitch: 7 inch | # Blades: 2 | Prop Const.: 1.08 | Gear Ratio: 1.00 :1

calculate

Approx. Values:

Warning:

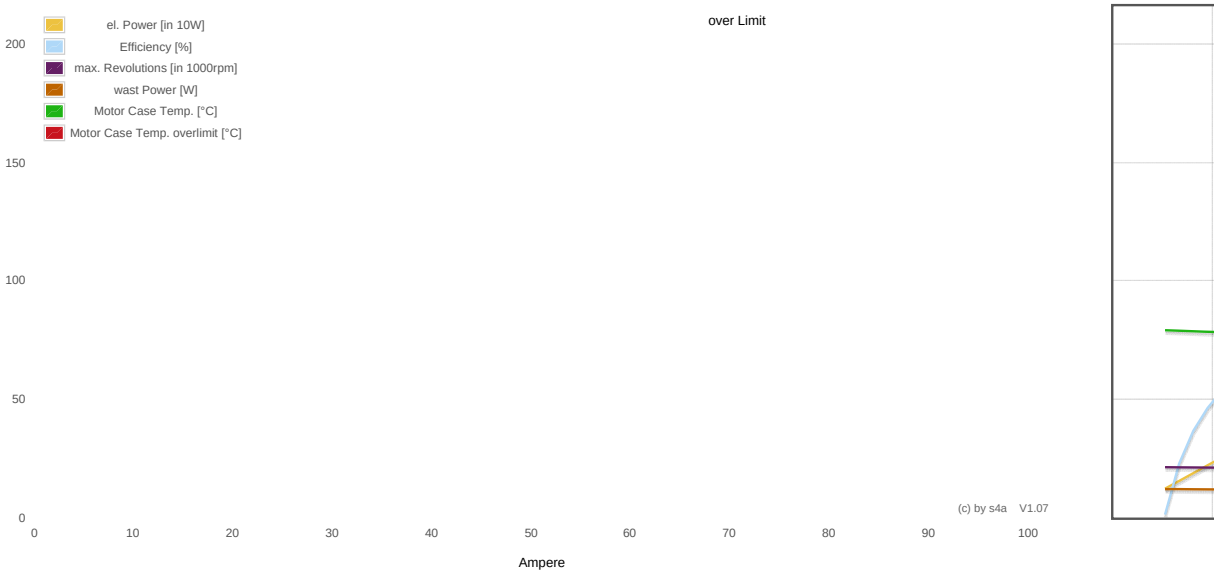
*** The Motor Voltage is close to the Limit - please verify the max. allowed Motor Voltage ** Prop may stall -> static thrust may not be reached! (see Prop Stall Thrust) ** max. power over the limit of the**

Battery:	Load: **21.9** C	Voltage: **21.27** V	Rated Voltage: 22.2 V	Flight Time*: 2.74 min	mixed Flight Time: 4.65 min	Weight: 678 g
Motor:	max. Current: **87.66** A	Voltage: 21.05 V	Revolutions: 18359 rpm	el. Power (In): 1845.35 W	mech. Power (out): 1661.61 W	Efficiency: 90 %
Optimal Efficiency:	Current: 98.37 A	Voltage: 20.75 V	Revolutions: 17986 rpm	el. Power (In): 2040.99 W	mech. Power (out): 1822.74 W	Efficiency: 89.3 %
Propeller:	Static Thrust: 5962.6 g / 210.32 oz	Prop Stall Thrust: **3206.5** g / **113.11** oz	Revolutions: 18359 rpm	Pitch Speed: 195.9 km/h / 122 mph	Tip Speed: 879 km/h / 546 mph	Prop Efficiency: 1.74 g/W / 0.06 oz/W
Entire Drive:	Weight: 1224.3 g Drive / 1500 g Total	Power-Weight: 1375 W/kg / 38.98 W/oz	Thrust-Weight: 2.14 : 1	P (in): 2062.82 W	P (out): 1661.61 W	Efficiency: **80.6** %

Motor Data:

Motor Cooling: medium

Power Scale: automatic



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!** **Verify before flight by measurment!**

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

generate Link >

V P5.16 08.05.12 / Data: 07.07.12 with 2649 Motors

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