54R

all Data without guarantee!
Accuracy +/-15%

xcopterCalc - Calculator for MultiCopter

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

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Design Fundamentals:

metric units

	# of Rotors: 4	xCopter Weight: 1500 g incl. Drive		Field Elevation: 2000 m ASL	Air Temp: 15 °C	Pressure (QNH): 1013 hPa
Battery: (continuous / max. C) - charge state: LiPo 6000mAh – 30/45C, full	# serial: 4 S	# parallel: 1 P	Capacity: 6000 mAh	Resistance: 0.0029 Ohm	Volt per Cell: 3.7 V	Weight per Cell: 169 g
Controller: max 20A	Resistance: 0.01 Ohm	Continuous Current: 20 A	max. Current: 20 A	Weight: 25 g		Motor Weight: 108 g
Motor: Manufacturer - Type (Kv in rpm/V): Aeolian, C2830-KV850 (850)	Kv (w/o torque): 850 rpm/V	Resistance: 0.272 Ohm	no-load Current: 0.6 A @ 10 V	Limit (up to 20s): 280 W	# mag. Poles: 12	Case length: 30 mm
Propeller: Type - yoke twist: APC SlowFly SF, 0°	Diameter: 12 inch	Pitch: 4.5 inch	# Blades: 2	Prop Const. 1.11	Gear Ratio: 1.00 :1	calculate

Approx. Values:

Warning:

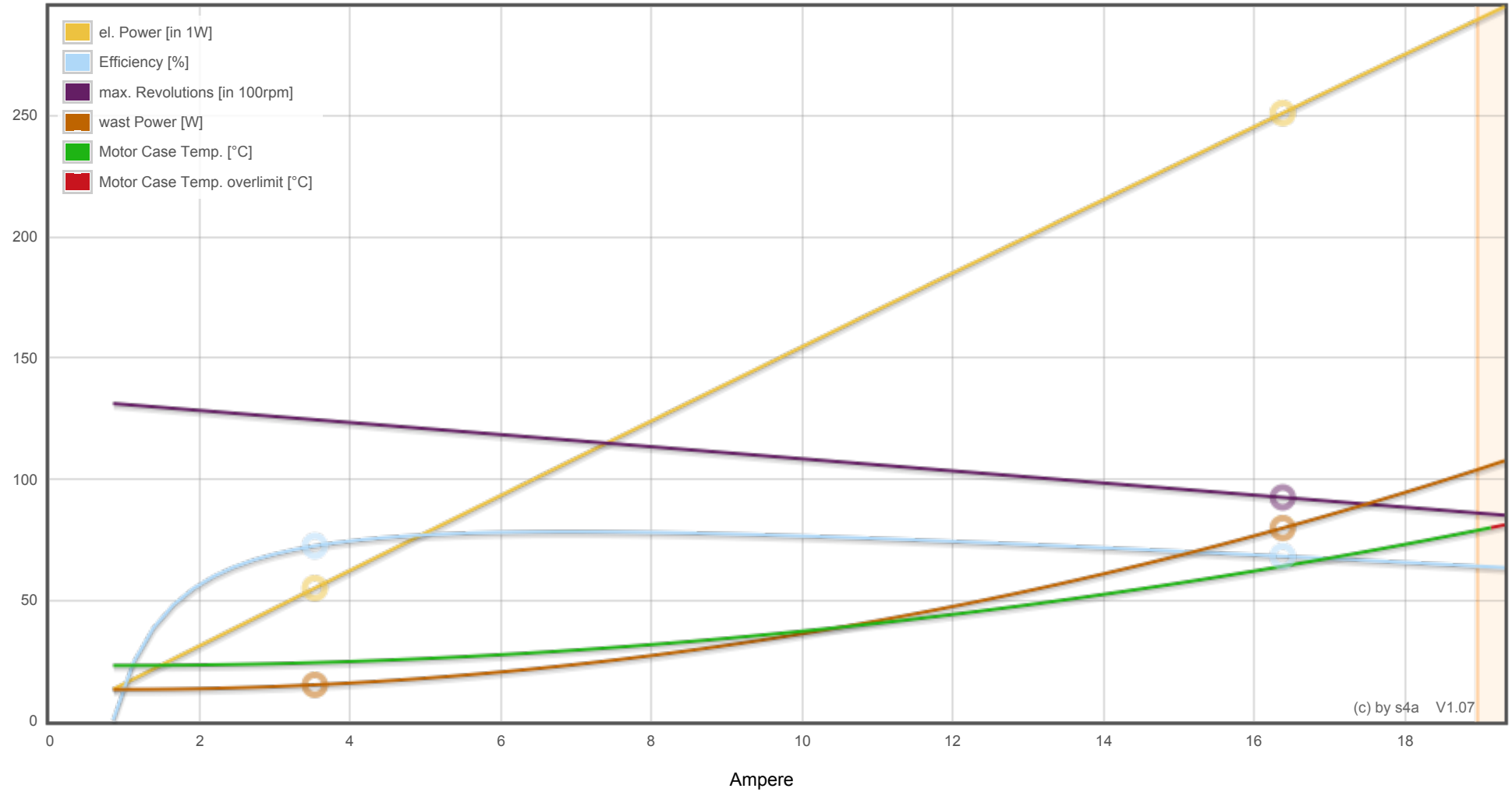
Battery:	max. Load: **10.9** C	Voltage: **14.93** V	Rated Voltage: 14.8 V	Flight Time*: 5.52 min	Flight Time Hover: 21.97 min	Weight: 676 g
Motor @ Maximum: Values per Motor	max. Current: **16.32** A	Voltage: 14.77 V	Revolutions: 8779 rpm	el. Power (In): 241.01 W	mech. Power (out): 162.2 W	Efficiency: 67.3 %
Optimal Efficiency:	Current: 6.54 A	Voltage: 15.32 V	Revolutions: 11509 rpm	el. Power (In): 100.19 W	mech. Power (out): 78.43 W	Efficiency: 78.3 %
Motor @ Hover: Values per Motor	Current: **3.48** A	Voltage: 15.49 V	Throttle (linear): 38 %	el. Power (In): 53.93 W	mech. Power (out): 39.02 W	Efficiency: 72.3 %
Entire Drive:	Total Current:	Weight:	add. Payload:	P (in):	P (out):	Efficiency:

13.93	A to hover	1328.8	g Drive	1292	g	218.46	W to hover	156.08	W to hover	71.4	%
65.26	A maximum	1500	g AUW	45.57	oz	1024.11	W maximum	648.8	W maximum	63.4	%

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!** Thrust reduction due long ducting are **not** considered!

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

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