



**xcopterCalc - Calculator for MultiCopter**

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



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**all Data without guarantee!**  
**Accuracy +/-15%**

**Design Fundamentals:**

<input type="text" value="metric units"/>	# of Rotors <input type="text" value="6"/>	xCopter Weight: <input type="text" value="2600"/> g <input type="text" value="without Drive"/>	Field Elevation: <input type="text" value="50"/> m ASL	Air Temp: <input type="text" value="25"/> °C	Pressure (QNH): <input type="text" value="1013"/> hPa	
Battery: (continuous / max. C) - charge state <input type="text" value="Custom"/> <input type="text" value="full"/>	# serial: <input type="text" value="4"/> S	# parallel: <input type="text" value="2"/> P	Capacity: <input type="text" value="10000"/> mAh	Resistance: <input type="text" value="0.0029"/> Ohm	Volt per Cell: <input type="text" value="3.7"/> V	Weight per Cell: <input type="text" value="134"/> g
Controller: <input type="text" value="Custom"/>	Resistance: <input type="text" value="0.0045"/> Ohm	Continuous Current: <input type="text" value="60"/> A	max. Current: <input type="text" value="60"/> A	Weight: <input type="text" value="60"/> g	Motor Weight: <input type="text" value="131"/> g	
Motor: Manufacturer - Type (Kv in rpm/V) <input type="text" value="select..."/> <input type="text" value="T2820 Pro (830)"/>	Kv (w/o torque): <input type="text" value="830"/> rpm/V	Resistance: <input type="text" value="0.05"/> Ohm	no-load Current: <input type="text" value="0.8"/> A @ <input type="text" value="10"/> V	Limit (up to 20s): <input type="text" value="1110"/> <input type="text" value="W"/>	# mag. Poles: <input type="text" value="14"/>	Case length: <input type="text" value="41"/> mm
Propeller: Type - yoke twist <input type="text" value="APC SlowFly SF"/> <input type="text" value="0°"/>	Diameter: <input type="text" value="14"/> inch	Pitch: <input type="text" value="4.7"/> inch	# Blades: <input type="text" value="2"/>	Prop Const. <input type="text" value="1.11"/>	Gear Ratio: <input type="text" value="1.00"/> :1	<input type="button" value="calculate"/>

**Approx. Values:**

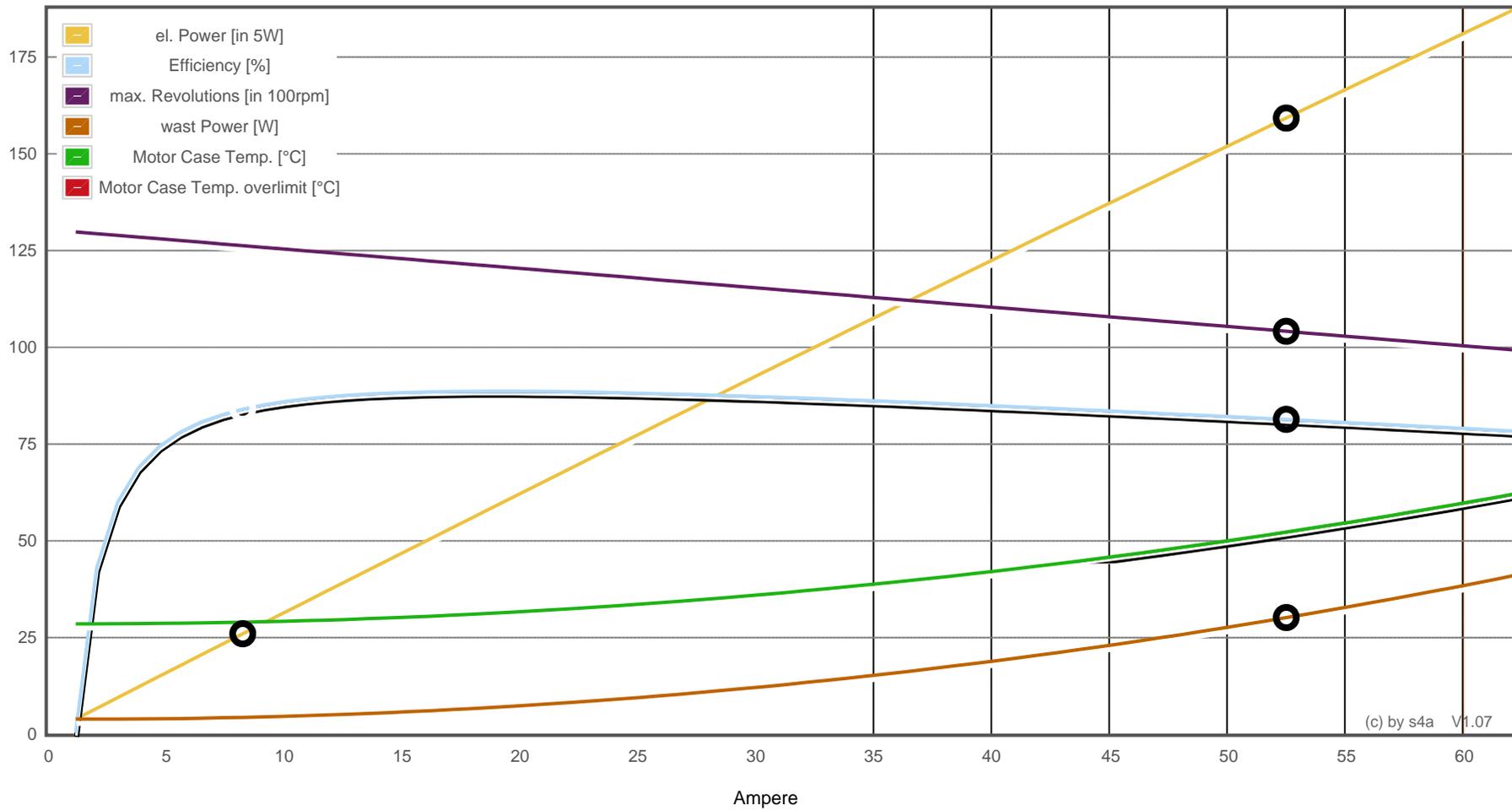
**Warning:**

<b>Battery:</b>	max. Load: <input type="text" value="31.6"/> C	Voltage: <input type="text" value="13.86"/> V	Rated Voltage: <input type="text" value="14.8"/> V	Flight Time*: <input type="text" value="1.9"/> min	Flight Time Hover: <input type="text" value="10.77"/> min	Weight: <input type="text" value="1072"/> g
<b>Motor @ Maximum:</b> Values per Motor	max. Current: <input type="text" value="52.6"/> A	Voltage: <input type="text" value="13.62"/> V	Revolutions: <input type="text" value="9122"/> rpm	el. Power (In): <input type="text" value="716.46"/> W	mech. Power (out): <input type="text" value="568.72"/> W	Efficiency: <input type="text" value="79.4"/> %
<b>Optimal Efficiency:</b>	Current: <input type="text" value="17.99"/> A	Voltage: <input type="text" value="14.98"/> V	Revolutions: <input type="text" value="11688"/> rpm	el. Power (In): <input type="text" value="269.51"/> W	mech. Power (out): <input type="text" value="238.4"/> W	Efficiency: <input type="text" value="88.5"/> %
<b>Motor @ Hover:</b> Values per Motor	Current: <input type="text" value="7.89"/> A	Voltage: <input type="text" value="15.38"/> V	Throttle (linear): <input type="text" value="28"/> %	el. Power (In): <input type="text" value="121.36"/> W	mech. Power (out): <input type="text" value="101.32"/> W	Efficiency: <input type="text" value="83.5"/> %
<b>Entire Drive:</b>	Total Current: <input type="text" value="47.35"/> A to hover <input type="text" value="315.57"/> A maximum	Weight: <input type="text" value="2439.8"/> g Drive <input type="text" value="5039.8"/> g AUW	add. Payload: <input type="text" value="6545"/> g <input type="text" value="230.86"/> oz	P (in): <input type="text" value="742.82"/> W to hover <input type="text" value="4951.13"/> W maximum	P (out): <input type="text" value="607.92"/> W to hover <input type="text" value="3412.32"/> W maximum	Efficiency: <input type="text" value="81.8"/> % <input type="text" value="68.9"/> %

Motor Data:

Motor Cooling:

Power Scale:



**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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 V X5.14 23.08.11 / Data: 25.09.11 with 2293 Motors

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