

...insert your project name...

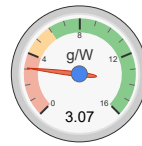
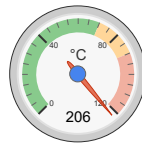
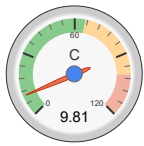


all data without guarantee - Accuracy: +/-15%

xcopterCalc - Multicopter Calculator

News | Help | Tutorial | Submit Specs | Language: english

General	Motor Cooling: <input type="text" value="good"/>	# of Rotors: <input type="text" value="2"/>	Model Weight: <input type="text" value="25000"/> g <input type="text" value="881.8"/> oz	incl. Drive <input type="text" value=""/>	Frame Size: <input type="text" value="3000"/> mm <input type="text" value="118.11"/> inch	FCU Tilt Limit: <input type="text" value="no limit"/>	Field Elevation: <input type="text" value="2000"/> m ASL <input type="text" value="6562"/> ft ASL	Air Temperature: <input type="text" value="20"/> °C <input type="text" value="68"/> °F	Pressure (QNH): <input type="text" value="1013"/> hPa <input type="text" value="29.91"/> inHg
Battery Cell	Type (Cont. / max. C) - charge state: <input type="text" value="LiPo 16000mAh - 65/100C"/> - <input type="text" value="normal"/>	Configuration: <input type="text" value="10"/> S <input type="text" value="2"/> P	Cell Capacity: <input type="text" value="16000"/> mAh <input type="text" value="32000"/> mAh total	max. discharge: <input type="text" value="85%"/>	Resistance: <input type="text" value="0.0007"/> Ohm	Voltage: <input type="text" value="3.7"/> V	C-Rate: <input type="text" value="65"/> C cont. <input type="text" value="100"/> C max	Weight: <input type="text" value="445"/> g <input type="text" value="15.7"/> oz	
Controller	Type: <input type="text" value="max 150A"/>	Current: <input type="text" value="150"/> A cont. <input type="text" value="150"/> A max	Resistance: <input type="text" value="0.0015"/> Ohm	Weight: <input type="text" value="200"/> g <input type="text" value="7.1"/> oz	Accessories		Current drain: <input type="text" value="0"/> A	Weight: <input type="text" value="0"/> g <input type="text" value="0"/> oz	
Motor	Manufacturer - Type (Kv): <input type="text" value="Kontronik"/> <input type="text" value="Pyro 850-31 (310)"/>	KV (w/o torque): <input type="text" value="310"/> rpm/V	no-load Current: <input type="text" value="2.62"/> A @ <input type="text" value="10"/> V	Limit (up to 15s): <input type="text" value="4000"/> W	Resistance: <input type="text" value="0.0263"/> Ohm	Case Length: <input type="text" value="61"/> mm <input type="text" value="2.4"/> inch	# mag. Poles: <input type="text" value="14"/>	Weight: <input type="text" value="580"/> g <input type="text" value="20.5"/> oz	
Propeller	Type - yoke twist: <input type="text" value="APC Electric E"/> - <input type="text" value="0°"/>	Diameter: <input type="text" value="25"/> inch <input type="text" value="635"/> mm	Pitch: <input type="text" value="4"/> inch <input type="text" value="101.6"/> mm	# Blades: <input type="text" value="2"/>	PConst / TConst: <input type="text" value="1.08"/> / <input type="text" value="1.0"/>	Gear Ratio: <input type="text" value="1"/> : <input type="text" value="1"/>	<input type="button" value="calculate"/>		



Remarks:

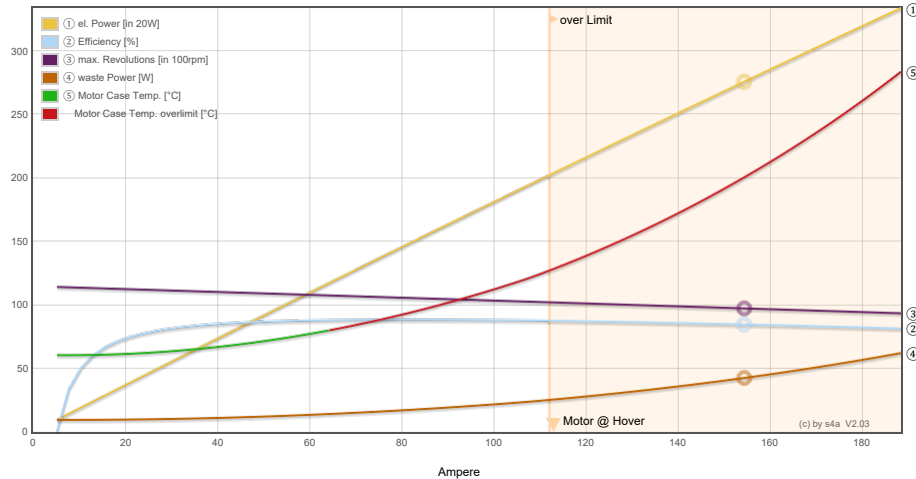
- max. current over the limit of the speed controller. Choose a bigger esc.
- the prediction of the motor case temperature is critical (>80°C/175°F). Risk of overheat, please check!
- max. power over the limit of the motor. Please check the max. power limits defined by the manufacturer!

Battery	Motor @ Optimum Efficiency	Motor @ Maximum	Motor @ Hover	Total Drive	Multicopter
Load: 9.81 C	Current: 79.53 A	Current: 157.04 A	Current: 113.12 A	Drive Weight: 11506 g	All-up Weight: 25000 g
Voltage: 35.90 V	Voltage: 36.32 V	Voltage: 35.67 V	Voltage: 36.04 V	405.9 oz	881.8 oz
Rated Voltage: 37.00 V	Revolutions*: 10570 rpm	Revolutions*: 9693 rpm	Revolutions*: 7728 rpm	Thrust-Weight: 1.2 : 1	add. Payload: 1185 g
Energy: 1184 Wh	electric Power: 2889.0 W	electric Power: 5600.8 W	76 %	Current @ Hover: 226.24 A	41.8 oz
Total Capacity: 32000 mAh	mech. Power: 2550.3 W	mech. Power: 4724.5 W	Throttle (linear): 80 %	P(in) @ Hover: 8371.0 W	max Tilt: 17 °
Used Capacity: 27200 mAh	Efficiency: 88.3 %	Power-Weight: 448.1 W/kg	electric Power: 4076.9 W	P(out) @ Hover: 6825.9 W	max. Speed: 14 km/h
min. Flight Time: 5.2 min		203.3 W/lb	mech. Power: 3412.9 W	Efficiency @ Hover: 81.5 %	8.7 mph
Mixed Flight Time: 6.9 min		Efficiency: 84.4 %	Power-Weight: 334.8 W/kg	Current @ max: 314.08 A	est. rate of climb: 1.3 m/s
Hover Flight Time: 7.2 min		est. Temperature: 206 °C	151.9 W/lb	P(in) @ max: 11620.9 W	256 ft/min
Weight: 8900 g		403 °F	Efficiency: 83.7 %	P(out) @ max: 9449.0 W	with Rotor fail:
313.9 oz			est. Temperature: 161 °C	Efficiency @ max: 81.3 %	
			322 °F		
			specific Thrust: 3.07 g/W		
			0.11 oz/W		

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<http://www.eCalc.ch...>

Motor Characteristic at Full Throttle



Important Note:
Before flight recheck your 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 measurement!**

for printing use Landscape format
* The manufacturer limitation is NOT monitored
** Testdata with reduced accuracy

