S4A

Member Full Version

all data without guarantee - Accuracy: +/-10%

xcopterCalc - Multicopter Calculator

Help | Language: english

General	Motor Cooling:	# of Rotors:	Model Weight:		Field Elevation	Air Temperature	Pressure (QNH):
	medium	6	2000 g	incl. Drive	500 m ASL	25 °C	1013 hPa
			70.5 oz		1640 ft ASL	77 °F	29.91 inHg

Battery Cell	Type (Cont. / max. C) - charge state:	Configuration:	Cell Capacity:	Total Capacity:	Resistance:	Voltage:	C-Rate:	Weight:
	LiPo 5000mAh – 30/45C - normal	3 S 2 P	5000 mAh	10000 mAh	0.0034 Ohm	3.7 V	30 C cont.	141 g
							45 C max	5 oz

Controller	Type:	cont. Curent:	max. Curent:	Resistance:	Weight:
	max 30A	30 A	30 A	0.008 Ohm	40 g
					1.4 oz

Motor	Manufacturer - Type (Kv):	KV (w/o torque):	no-load Current:	Limit (up to 15s):	Resistance:	Case Length:	# mag. Poles:	Weight:
	E-flite Park 450 (890)	890 rpm/V	0.7 A @ 10 V	18 A	0.2 Ohm	27 mm	12	72 g
	search...					1.06 inch		2.5 oz

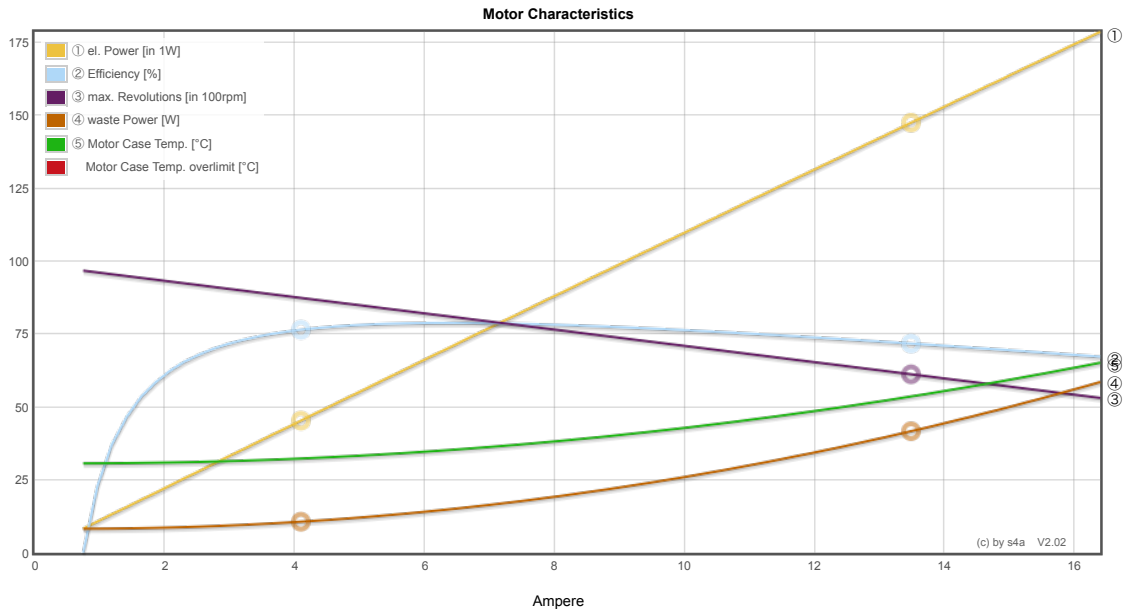| Propeller	Type - yoke twist:	Diameter:	Pitch:	# Blades:	PConst:	Gear Ratio:	
	custom - 0°	11 inch	4.7 inch	2	1.3	1 : 1	calculate

Remarks:

Battery		Motor @ Optimum Efficiency		Motor @ Maximum		Motor @ Hover		Total Drive	
Load:	8.20 C	Current:	6.12 A	Current:	13.67 A	Current:	4.16 A	Drive Weight:	1670 g
Voltage:	10.68 V	Voltage:	10.86 V	Voltage:	10.57 V	Voltage:	10.94 V		58.9 oz
Rated Voltage:	11.10 V	Revolutions*:	8034 rpm	Revolutions*:	5760 rpm	Throttle (linear):	52 %	All-up Weight:	2000 g
Flight Time:	7.3 min	electric Power:	66.5 W	electric Power:	144.5 W	electric Power:	45.5 W		70.5 oz
Mixed Flight Time:	9.5 min	mech. Power:	52.3 W	mech. Power:	102.2 W	mech. Power:	34.9 W	add. Payload:	1005 g
Hover Flight Time:	20.4 min	Efficiency:	78.7 %	Efficiency:	70.7 %	Efficiency:	76.6 %		35.4 oz
Weight:	846 g			est. Temperature:	54 °C	est. Temperature:	32 °C	Current @ Hover:	24.98 A
	29.8 oz				129 °F		90 °F	P(in) @ Hover:	277.3 W
								P(out) @ Hover:	209.4 W
								Efficiency @ Hover:	75.5 %
								Current @ max:	82.01 A
								P(in) @ max:	910.3 W
								P(out) @ max:	613.2 W
								Efficiency @ max:	67.4 %

Motor Characteristics

- ① el. Power [in 1W]
- ② Efficiency [%]
- ③ max. Revolutions [in 100rpm]
- ④ waste Power [W]
- ⑤ Motor Case Temp. [°C]
- Motor Case Temp. overlimit [°C]

(c) by s4a   V2.02

Ampere

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 measurment!**
generate link >

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