54A

Member Full Version

...insert your project name...

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

eCalc

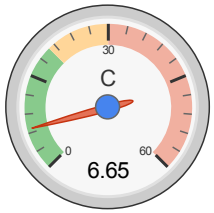
propCalc - Propeller Calculator

Welcome Cyrus

Membership Expiry: 03/07/17

Logout - Profile

General	Motor Cooling: medium	# of Motors: 1 (on same Battery)	Model Weight: 1000 g incl. Drive / 35.3 oz	Wing Area: 35 dm² / 542.5 in²	Field Elevation: 500 m ASL / 1640 ft ASL	Air Temperature: 25 °C / 77 °F	Pressure (QNH): 1013 hPa / 29.91 inHg		
Battery Cell	Type (Cont. / max. C) - charge state: LiPo 4000mAh - 20/30C - normal	Configuration: 4 S 1 P	Cell Capacity: 4000 mAh / 4000 mAh total	max. discharge: 85%	Resistance: 0.0056 Ohm	Voltage: 3.7 V	C-Rate: 20 C cont. / 30 C max	Weight: 95 g / 3.4 oz	
Controller	Type: max 30A	Current: 30 A cont. / 30 A max	Resistance: 0.008 Ohm	Weight: 40 g / 1.4 oz	Wire extension battery: AWG10=5.27mm²	Length: 0 mm / 0 inch	Wire extension motor: AWG10=5.27mm²	Length: 0 mm / 0 inch	
Motor	Manufacturer - Type (Kv): SunnySky - X2216-1250 (1250) search... Prop-Kv-Wizard	KV (w/o torque): 1250 rpm/V	no-load Current: 1.1 A @ 10 V	Limit (up to 15s): 390 W	Resistance: 0.063 Ohm	Case Length: 34 mm / 1.34 inch	# mag. Poles: 14	Weight: 70 g / 2.5 oz	
Propeller	Type - yoke twist: Graupner CAM Folding Prop - 0°	Diameter: 8 inch / 203.2 mm	Pitch: 5 inch / 127 mm	# Blades: 2	PConst / TConst: 1.18 / 1.0	Gear Ratio: 1 : 1	Flight Speed: 0 km/h / 0 mph	calculate	



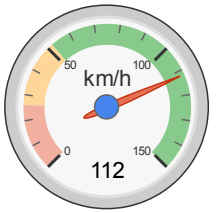
Load:

Mixed Flight Time:

electric Power:

est. Temperature:

Thrust-Weight:



Pitch Speed:

Remarks:

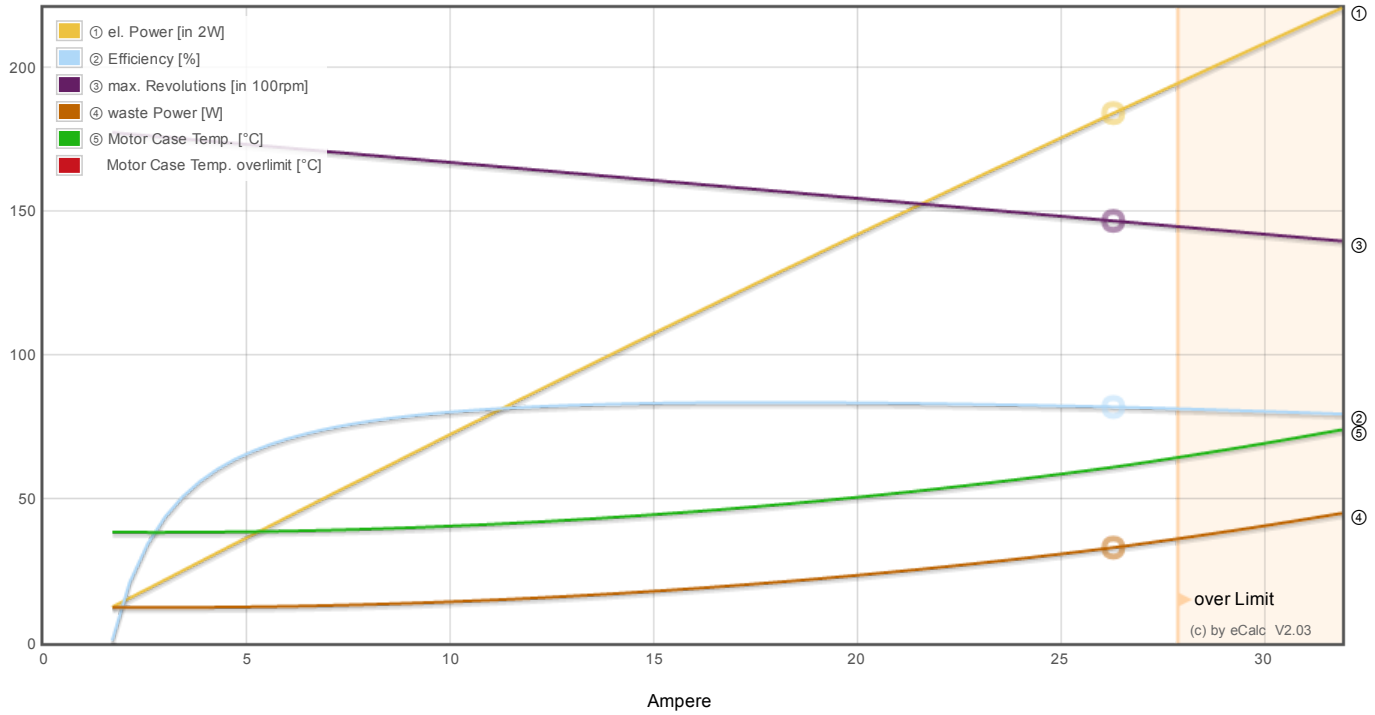
Battery		**Motor @ Optimum Efficiency**		**Motor @ Maximum**		**Propeller**		**Total Drive**		**Airplane**	
Load:	6.65 C	Current:	17.14 A	Current:	26.59 A	Static Thrust:	1474 g	Drive Weight:	539 g	All-up Weight:	1000 g
Voltage:	14.20 V	Voltage:	14.28 V	Voltage:	13.99 V		52 oz		19 oz		35.3 oz
Rated Voltage:	14.80 V	Revolutions*:	15807 rpm	Revolutions*:	14628 rpm	Revolutions*:	14628 rpm	Power-Weight:	394 W/kg	Wing Load:	29 g/dm²
Energy:	59.2 Wh	electric Power:	244.8 W	electric Power:	372.0 W	Stall Thrust:	998 g		179 W/lb		9.5 oz/ft²
Total Capacity:	4000 mAh	mech. Power:	204.5 W	mech. Power:	304.6 W		35.2 oz	Thrust-Weight:	1.47 : 1	Cubic Wing Load:	4.8
Used Capacity:	3400 mAh	Efficiency:	83.5 %	Efficiency:	81.9 %	Thrust @ 0 km/h:	1474 g	P(in) @ max:	393.5 W	est. Stall Speed:	26 km/h
min. Flight Time:	7.7 min			est. Temperature:	62 °C	Thrust @ 0 mph:	52 oz	P(out) @ max:	304.6 W		16 mph
Mixed Flight Time:	15.9 min				144 °F	Pitch Speed:	112 km/h	Efficiency @ max:	77.4 %	est. Speed (level):	99 km/h
Weight:	380 g						70 mph				61 mph
	13.4 oz					Tip Speed:	560 km/h			est. Speed (vertical):	34 km/h
							348 mph				21 mph
						specific Thrust:	3.96 g/W			est. rate of climb:	9.5 m/s
							0.14 oz/W				1876 ft/min

share http:// http://www.eCalc.ch... add to >> Download .csv (0) << clear

Motor Partial Load

Propeller rpm	Throttle %	Current (DC) A	Volage (DC) V	el. Power W	Efficiency %	Thrust g	Spec. Thrust g/W	Pitch Speed km/h	Thrust oz	Spec. Thrust oz/W	Pitch Speed mph	Flight Time (85%) min
2200	13	0.2	14.8	2.4	43.4	33	14.0	17	1.2	0.50	10	1264.5
3300	19	0.4	14.8	5.6	61.7	75	13.3	25	2.6	0.47	16	532.0
4400	26	0.8	14.8	11.5	72.0	133	11.6	34	4.7	0.41	21	261.4
5500	33	1.4	14.8	20.8	77.6	208	10.0	42	7.3	0.35	26	144.0
6600	40	2.4	14.7	34.5	80.7	300	8.7	50	10.6	0.31	31	86.5
7700	47	3.7	14.7	53.7	82.4	408	7.6	59	14.4	0.27	36	55.4
8800	55	5.5	14.7	79.3	83.3	533	6.7	67	18.8	0.24	42	37.4
9900	63	7.8	14.6	112.4	83.6	675	6.0	75	23.8	0.21	47	26.3
11000	**71**	**10.7**	**14.6**	**154.1**	**83.7**	**833**	**5.4**	**84**	**29.4**	**0.19**	**52**	**19.1**
12100	79	14.4	14.5	205.5	83.5	1009	4.9	92	35.6	0.17	57	14.2
13200	88	18.9	14.4	267.8	83.2	1200	4.5	101	42.3	0.16	63	10.8
14300	97	24.4	14.3	342.2	82.8	1409	4.1	109	49.7	0.15	68	8.4
14628	100	26.6	14.2	372.0	81.9	1474	4.0	112	52.0	0.14	69	7.7

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 measurment!**

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

Version: P6.71, 15.09.16 / Data: 17.11.16 with 7206 Motors