54A

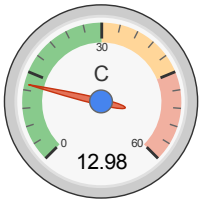
Member Full Version

...insert your project name...

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

propCalc - Propeller Calculator

General	Motor Cooling: medium	# of Motors: 1 (on same Battery)	Model Weight: 2190 g / 77.3 oz less Battery	Wing Area: 96.5 dm² / 1496.5 in²	Field Elevation: 76 m ASL / 250 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 - 30/45C - normal	Configuration: 4 S 1 P	Cell Capacity: 4000 mAh / 4000 mAh total	max. discharge: 85%	Resistance: 0.0043 Ohm	Voltage: 3.7 V	C-Rate: 30 C cont. / 45 C max	Weight: 101 g / 3.6 oz	
Controller	Type: max 80A	Current: 80 A cont. / 80 A max	Resistance: 0.0035 Ohm	Weight: 105 g / 3.7 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): Turnigy SK3-3548-840 (840) search... Prop-Kv-Wizard	KV (w/o torque): 840 rpm/V	no-load Current: 1.7 A @ 12.1 V	Limit (up to 15s): 750 W	Resistance: 0.025 Ohm	Case Length: 49 mm / 1.93 inch	# mag. Poles: 10	Weight: 174 g / 6.1 oz	
Propeller	Type - yoke twist: Graupner CAM Folding Prop - 0°	Diameter: 12 inch / 304.8 mm	Pitch: 6 inch / 152.4 mm	# Blades: 2	PConst / TConst: 1.18 / 1.0	Gear Ratio: 1 : 1	Flight Speed: 0 km/h / 0 mph	calculate	



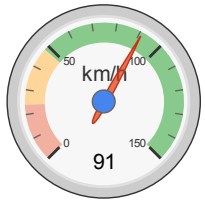
Load:

Mixed Flight Time:

electric Power:

est. Temperature:

Thrust-Weight:



Pitch Speed:

Remarks:

Battery		**Motor @ Optimum Efficiency**		**Motor @ Maximum**		**Propeller**		**Total Drive**		**Airplane**	
Load:	12.98 C	Current:	29.82 A	Current:	51.91 A	Static Thrust:	2915 g	Drive Weight:	751 g	All-up Weight:	2594 g
Voltage:	13.91 V	Voltage:	14.18 V	Voltage:	13.73 V		102.8 oz		26.5 oz		91.5 oz
Rated Voltage:	14.80 V	Revolutions*:	10857 rpm	Revolutions*:	9967 rpm	Revolutions*:	9967 rpm	Power-Weight:	296 W/kg	Wing Load:	27 g/dm²
Energy:	59.2 Wh	electric Power:	423.0 W	electric Power:	712.5 W	Stall Thrust:	2468 g		134 W/lb		8.8 oz/ft²
Total Capacity:	4000 mAh	mech. Power:	373.4 W	mech. Power:	614.0 W		87.1 oz	Thrust-Weight:	1.12 : 1	Cubic Wing Load:	2.7
Used Capacity:	3400 mAh	Efficiency:	88.3 %	Efficiency:	86.2 %	exc.Thrust @ 0 km/h:	2915 g	P(in) @ max:	768.2 W	est. Stall Speed:	24 km/h
min. Flight Time:	3.9 min			est. Temperature:	62 °C	exc.Thrust @ 0 mph:	102.8 oz	P(out) @ max:	614.0 W		15 mph
Mixed Flight Time:	6.8 min				144 °F	Pitch Speed:	91 km/h	Efficiency @ max:	79.9 %	est. Speed (level):	82 km/h
Weight:	404 g			**Wattmeter readings**			57 mph				51 mph
	14.3 oz			Current:	51.91 A	Tip Speed:	573 km/h			est. Speed (vertical):	10 km/h
				Voltage:	13.91 V		356 mph				6 mph
				Power:	722.1 W	specific Thrust:	4.09 g/W			est. rate of climb:	6.5 m/s
							0.14 oz/W				1282 ft/min

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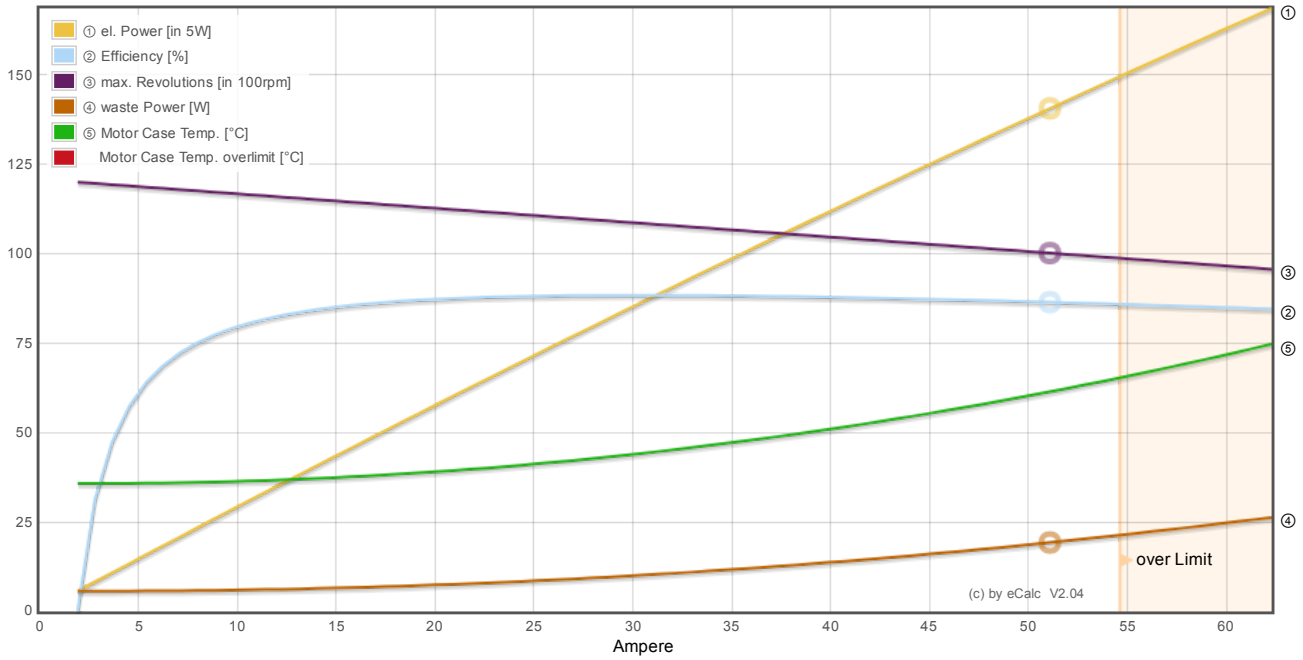
Motor Partial Load

Propeller	Throttle	Current (DC)	Volage (DC)	el. Power	Efficiency	Thrust		Spec. Thrust		Pitch Speed		Speed (level)		Motor Run Time
rpm	%	A	V	W	%	g	oz	g/W	oz/W	km/h	mph	km/h	mph	(85%) min
1400	12	0.3	14.8	4.1	41.8	58	2.0	14.1	0.50	13	8	-	-	738.9
2100	18	0.6	14.8	9.5	60.5	129	4.6	13.7	0.48	19	12	-	-	316.9
2800	24	1.3	14.8	19.0	71.7	230	8.1	12.1	0.43	26	16	-	-	158.2
3500	31	2.3	14.8	33.9	78.2	359	12.7	10.6	0.37	32	20	-	-	88.2
4200	37	3.8	14.7	55.9	82.1	518	18.3	9.3	0.33	38	24	33	20	53.4
4900	44	5.9	14.7	86.3	84.4	705	24.9	8.2	0.29	45	28	40	25	34.5
5600	51	8.7	14.6	126.8	85.7	920	32.5	7.3	0.26	51	32	46	29	23.4
6300	58	12.4	14.6	179.0	86.5	1165	41.1	6.5	0.23	58	36	52	32	16.5
7000	**65**	**17.0**	**14.5**	**244.5**	**86.8**	**1438**	**50.7**	**5.9**	**0.21**	**64**	**40**	**58**	**36**	**12.0**
7700	73	22.8	14.4	325.0	87.0	1740	61.4	5.4	0.19	70	44	63	39	8.9
8400	81	29.9	14.3	422.2	86.9	2071	73.0	4.9	0.17	77	48	69	43	6.8
9100	89	38.5	14.1	537.9	86.7	2430	85.7	4.5	0.16	83	52	75	46	5.3
9800	98	48.9	14.0	673.9	86.5	2818	99.4	4.2	0.15	90	56	81	50	4.2
9967	100	51.9	13.9	712.5	86.2	2915	102.8	4.1	0.14	91	57	82	51	3.9

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: P7.00, 09.05.17 / Data: 11.05.17 with 7945 Motors
translated to english by Markus Mueller