

548

Member Full Version

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

propCalc - Propeller Calculator



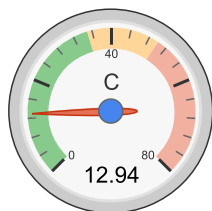
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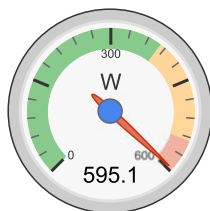
General	Model Weight: 1500 g w/o Drive ▼ 52.9 oz	# of Motors: 1 (on same Battery)	Wing Area: 26.8 dm² 415.4 in²	Drag: simplified ▼ 0.05 Cd	Cross Section: 0 dm² 0 in²	Field Elevation: 500 m ASL 1640 ft ASL	Air Temperature: 25 °C 77 °F	Pressure (QNH): 1013 hPa 29.91 inHg
Battery Cell	Type (Cont. / max. C) - charge state: LiPo 2200mAh - 35/50C ▼ - normal ▼	Configuration: 6 S 1 P	Cell Capacity: 2200 mAh 2200 mAh total	max. discharge: 85% ▼	Resistance: 0.0066 Ohm	Voltage: 3.7 V	C-Rate: 35 C cont. 50 C max	Weight: 56 g 2 oz
Controller	Type: max 40A ▼	Current: 40 A cont. 40 A max	Resistance: 0.006 Ohm	Weight: 50 g 1.8 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) - Cooling: Turnigy ▼ - SK3-3548-700 (700) ▼ medium ▼ search...	KV (w/o torque): 700 rpm/V Prop-Kv-Wizard	no-load Current: 1.5 A @ 12.1 V	Limit (up to 15s): 545 W ▼	Resistance: 0.035 Ohm	Case Length: 49 mm 1.93 inch	# mag. Poles: 10	Weight: 167 g 5.9 oz
Propeller	Type - yoke twist: APC Electric E ▼ - 0° ▼	Diameter: 10 inch 254 mm	Pitch: 5 inch 127 mm	# Blades: 2	PConst / TConst: 1.08 / 1.0	Gear Ratio: 1 : 1	Flight Speed: 0 km/h 0 mph	calculate



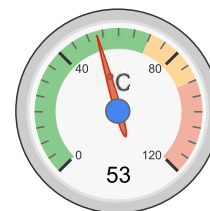
Load:



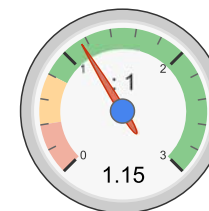
Mixed Flight Time:



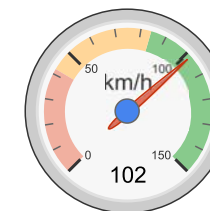
electric Power:



est. Temperature:



Thrust-Weight:



Pitch Speed:

Remarks:

- The Motor Voltage is close or over to the Limit - please verify the max. allowed Motor Voltage / cell count
- max. power over the limit of the motor. Please check the max. power limits defined by the manufacturer! (electric Power: 595.1 W > Limit (up to 15s): 545 W)

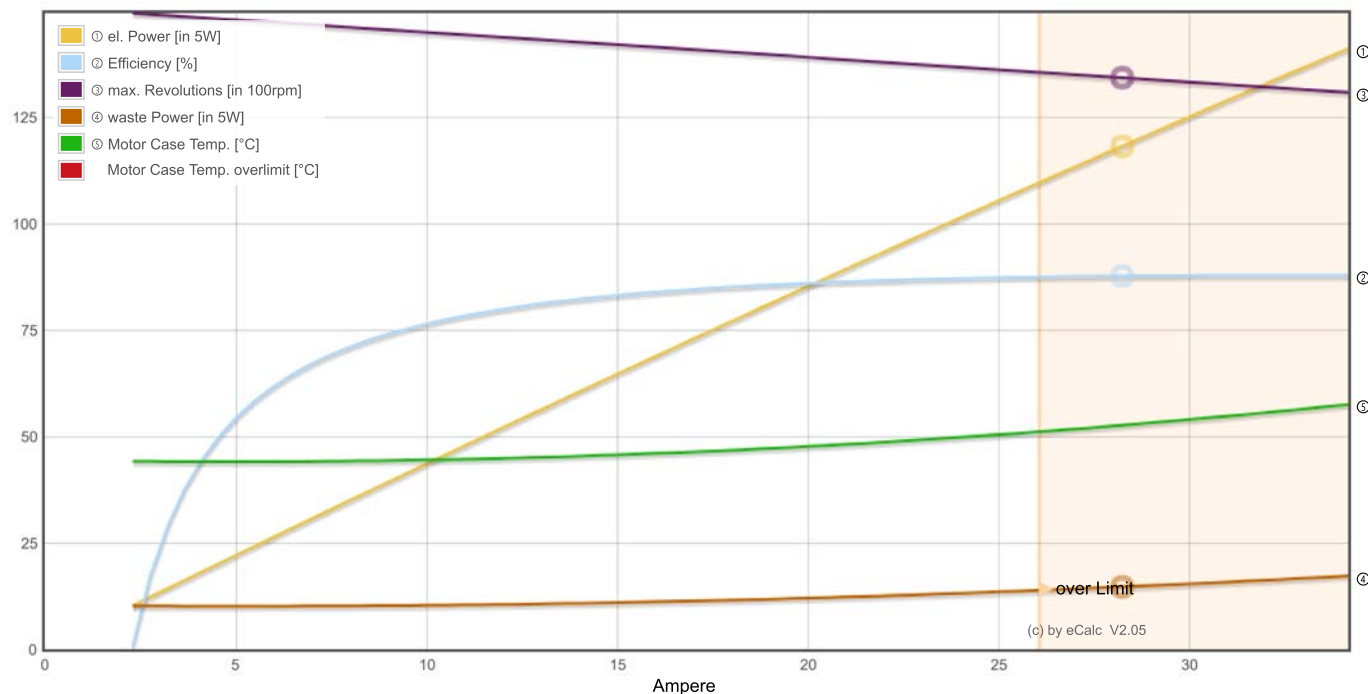
Battery		Motor @ Optimum Efficiency		Motor @ Maximum		Propeller		Total Drive		Airplane	
Load:	12.94 C	Current:	32.69 A	Current:	28.47 A	Static Thrust:	2421 g	Drive Weight:	608 g	All-up Weight:	2108 g
Voltage:	21.07 V	Voltage:	20.71 V	Voltage:	20.90 V		85.4 oz		21.4 oz		74.4 oz
Rated Voltage:	22.20 V	Revolutions*:	13168 rpm	Revolutions*:	13414 rpm	Revolutions*:	13414 rpm	Power-Weight:	300 W/kg	Wing Load:	79 g/dm²
Energy:	48.84 Wh	electric Power:	677.0 W	electric Power:	595.1 W	Stall Thrust:	1876 g		136 W/lb		25.9 oz/ft²
Total Capacity:	2200 mAh	mech. Power:	594.6 W	mech. Power:	521.7 W		66.2 oz	Thrust-Weight:	1.15 : 1	Cubic Wing Load:	15.2
Used Capacity:	1870 mAh	Efficiency:	87.8 %	Efficiency:	87.7 %	avail.Thrust @ 0 km/h:	2421 g	Current @ max:	28.47 A	est. Stall Speed:	42 km/h
min. Flight Time:	3.9 min			est. Temperature:	53 °C	avail.Thrust @ 0 mph:	85.4 oz	P(in) @ max:	632.1 W		26 mph
Mixed Flight Time:	6.9 min				127 °F	Pitch Speed:	102 km/h	P(out) @ max:	521.7 W	est. Speed (level):	94 km/h
Weight:	336 g						63 mph	Efficiency @ max:	82.5 %		58 mph
	11.9 oz					Tip Speed:	642 km/h	Torque:	0.37 Nm	est. Speed (vertical):	13 km/h
				Wattmeter readings							

Current: 28.47 A 399 mph 0.27 lbf.ft 8 mph
 Voltage: 21.07 V specific Thrust: 4.07 g/W est. rate of climb: 9.3 m/s
 Power: 599.9 W 0.14 oz/W 1827 ft/min

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Propeller rpm	Throttle %	Motor Partial Load												Motor Run Time (85%) min
		Current (DC) A	Voltage (DC) V	el. Power W	Efficiency %	Thrust g	oz	Spec. Thrust g/W	oz/W	Pitch Speed km/h	mph	Speed (level) km/h	mph	
2000	14	0.2	22.2	5.5	31.4	54	1.9	9.8	0.34	15	9	-	-	449.6
3000	20	0.5	22.2	11.7	50.0	121	4.3	10.4	0.37	23	14	-	-	212.2
4000	27	1.0	22.2	22.0	63.1	215	7.6	9.8	0.35	30	19	-	-	112.8
5000	34	1.7	22.1	37.8	71.7	336	11.9	8.9	0.31	38	24	-	-	65.5
6000	41	2.8	22.1	60.5	77.2	484	17.1	8.0	0.28	46	28	-	-	40.8
7000	49	4.2	22.0	91.7	80.9	659	23.3	7.2	0.25	53	33	-	-	26.8
8000	56	6.1	22.0	132.9	83.4	861	30.4	6.5	0.23	61	38	39	24	18.4
9000	63	8.5	21.9	185.5	85.1	1090	38.4	5.9	0.21	69	43	63	39	13.1
10000	71	11.6	21.7	251.0	86.2	1345	47.5	5.4	0.19	76	47	70	43	9.7
11000	79	15.4	21.6	331.1	87.0	1628	57.4	4.9	0.17	84	52	77	48	7.3
12000	88	20.1	21.4	427.2	87.5	1937	68.3	4.5	0.16	91	57	84	52	5.6
13000	96	25.7	21.2	541.1	87.9	2274	80.2	4.2	0.15	99	62	91	56	4.4
13414	100	28.5	21.1	595.1	87.7	2421	85.4	4.1	0.14	102	64	94	58	3.9

Motor Characteristic at Full Throttle



Important Note:

for printing use Landscape format

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!**

* The manufacturer limitation is NOT monitored

** Testdata with reduced accuracy

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