



Member Full Version

...insert your project name...

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



propCalc - Propeller Calculator



YouTube 321

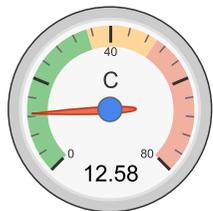
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General	Model Weight: 1500 g w/o Drive 52.9 oz	# of Motors: 1 (on same Battery)	Wing Area: 26.8 dm ² 415.4 in ²	Drag: simplified 0.05 Cd	Cross Section: 0 dm ² 0 in ²	Field Elevation: 500 m ASL 1640 ft ASL	Air Temperature: 25 °C 77 °F	Pressure (QNH): 1013 hPa 29.91 inHg
Battery Cell	Type (Cont. / max. C) - charge state: LiPo 3000mAh - 35/50C - normal	Configuration: 4 S 1 P	Cell Capacity: 3000 mAh 3000 mAh total	max. discharge: 85%	Resistance: 0.0048 Ohm	Voltage: 3.7 V	C-Rate: 35 C cont. 50 C max	Weight: 77 g 2.7 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=5.27mm ²	Length: 0 mm 0 inch	Wire extension motor: AWG10=5.27mm ²	Length: 0 mm 0 inch
Motor	Manufacturer - Type (Kv) - Cooling: Turnigy - D3548-6 (790) - medium	KV (w/o torque): 790 rpm/V Prop-Kv-Wizard	no-load Current: 1.8 A @ 8 V	Limit (up to 15s): 715 W	Resistance: 0.04 Ohm	Case Length: 48 mm 1.89 inch	# mag. Poles: 10	Weight: 159 g 5.6 oz
Propeller	Type - yoke twist: APC Electric E - 0°	Diameter: 12 inch 304.8 mm	Pitch: 6 inch 152.4 mm	# Blades: 2	PConst / TConst: 1.08 / 1.0	Gear Ratio: 1 : 1	Flight Speed: 0 km/h 0 mph	<input type="button" value="calculate"/>



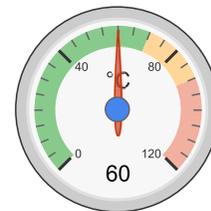
Load:



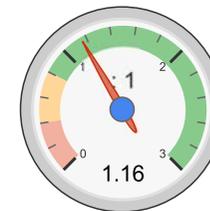
Mixed Flight Time:



electric Power:



est. Temperature:



Thrust-Weight:



Pitch Speed:

Remarks:

Battery	Motor @ Optimum Efficiency	Motor @ Maximum	Propeller	Total Drive	Airplane
Load: 12.58 C	Current: 26.16 A	Current: 37.75 A	Static Thrust: 2403 g	Drive Weight: 569 g	All-up Weight: 2069 g
Voltage: 14.08 V	Voltage: 14.14 V	Voltage: 13.85 V	84.8 oz	20.1 oz	73 oz
Rated Voltage: 14.80 V	Revolutions*: 9914 rpm	Revolutions*: 9281 rpm	Revolutions*: 9281 rpm	Power-Weight: 270 W/kg	Wing Load: 77 g/dm ²
Energy: 44.4 Wh	electric Power: 369.9 W	electric Power: 522.8 W	Stall Thrust: 1862 g	123 W/lb	25.2 oz/ft ²
Total Capacity: 3000 mAh	mech. Power: 309.9 W	mech. Power: 431.6 W	65.7 oz	Thrust-Weight: 1.16 : 1	Cubic Wing Load: 14.9
Used Capacity: 2550 mAh	Efficiency: 83.8 %	Efficiency: 82.5 %	avail. Thrust @ 0 km/h: 2403 g	Current @ max: 37.75 A	est. Stall Speed: 42 km/h
min. Flight Time: 4.1 min		est. Temperature: 60 °C	avail. Thrust @ 0 mph: 84.8 oz	P(in) @ max: 558.7 W	26 mph
Mixed Flight Time: 7.1 min		140 °F	Pitch Speed: 85 km/h	P(out) @ max: 431.6 W	est. Speed (level): 78 km/h
Weight: 308 g			53 mph	Efficiency @ max: 77.2 %	48 mph
10.9 oz			Tip Speed: 533 km/h	Torque: 0.44 Nm	est. Speed (vertical): 12 km/h
			331 mph	0.32 lbf.ft	7 mph
			specific Thrust: 4.60 g/W		est. rate of climb: 7.9 m/s

Power: 531.5 W

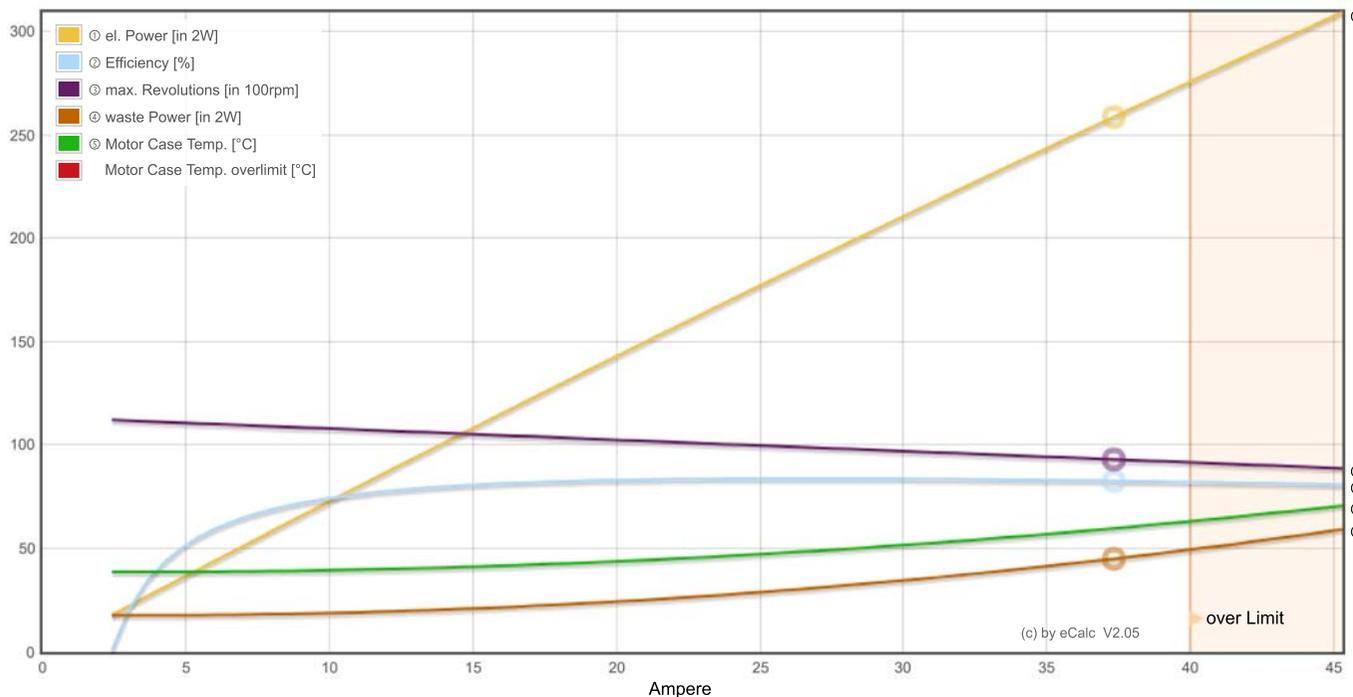
0.16 oz/W

1562 ft/min

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Propeller rpm	Throttle %	Motor Partial Load													
		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	Motor Run Time (85%) min	
1400	13	0.3	14.8	4.6	31.9	55	1.9	11.8	0.42	13	8	-	-	484.3	
2100	20	0.7	14.8	10.0	50.0	123	4.3	12.3	0.44	19	12	-	-	225.4	
2800	26	1.3	14.8	18.9	62.5	219	7.7	11.6	0.41	26	16	-	-	118.7	
3500	33	2.2	14.8	32.7	70.5	342	12.1	10.4	0.37	32	20	-	-	68.4	
4200	40	3.6	14.7	52.8	75.5	492	17.4	9.3	0.33	38	24	-	-	42.3	
4900	48	5.5	14.7	80.5	78.7	670	23.6	8.3	0.29	45	28	-	-	27.6	
5600	55	8.1	14.6	117.2	80.7	875	30.9	7.5	0.26	51	32	-	-	18.9	
6300	63	11.4	14.6	164.5	81.9	1107	39.1	6.7	0.24	58	36	-	-	13.4	
7000	71	15.6	14.5	223.7	82.6	1367	48.2	6.1	0.22	64	40	53	33	9.8	
7700	79	20.9	14.4	296.5	82.9	1654	58.3	5.6	0.20	70	44	65	40	7.3	
8400	88	27.3	14.3	384.5	83.0	1968	69.4	5.1	0.18	77	48	71	44	5.6	
9100	97	35.2	14.1	489.2	83.0	2310	81.5	4.7	0.17	83	52	76	47	4.3	
9281	100	37.8	14.1	522.8	82.5	2403	84.8	4.6	0.16	85	53	78	48	4.1	

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

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translated to english by Markus Mueller

