



Member Full Version

...insert your project name...

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



propCalc - Propeller Calculator



YouTube 138

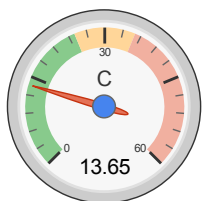
Welcome Cyrus

Membership Expiry: 03/07/17

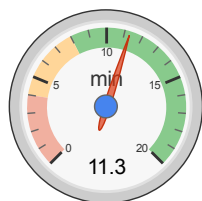
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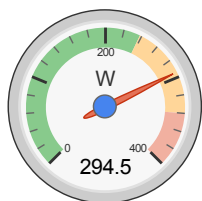
<b>General</b>	Motor Cooling: medium	# of Motors: 1 (on same Battery)	Model Weight: 250 g less Battery 8.8 oz	Wing Area: 11 dm <sup>2</sup> 170.5 in <sup>2</sup>	Field Elevation: 76 m ASL 250 ft ASL	Air Temperature: 25 °C 77 °F	Pressure (QNH): 1013 hPa 29.91 inHg	
<b>Battery Cell</b>	Type (Cont. / max. C) - charge state: LiPo 1600mAh - 25/35C - normal	Configuration: 4 S 1 P	Cell Capacity: 1600 mAh 1600 mAh total	max. discharge: 85%	Resistance: 0.0131 Ohm	Voltage: 3.7 V	C-Rate: 25 C cont. 35 C max	Weight: 40 g 1.4 oz
<b>Controller</b>	Type: max 30A	Current: 30 A cont. 30 A max	Resistance: 0.008 Ohm	Weight: 40 g 1.4 oz	Wire extension battery: AWG10=5.27mm <sup>2</sup>	Length: 0 mm 0 inch	Wire extension motor: AWG10=5.27mm <sup>2</sup>	Length: 0 mm 0 inch
<b>Motor</b>	Manufacturer - Type (Kv): Turnigy D2826-6 (2200) search... Prop-Kv-Wizard	KV (w/o torque): 2200 rpm/V	no-load Current: 0.8 A @ 8 V	Limit (up to 15s): 340 W	Resistance: 0.16 Ohm	Case Length: 31 mm 1.22 inch	# mag. Poles: 10	Weight: 50 g 1.8 oz
<b>Propeller</b>	Type - yoke twist: APC Electric E - 0°	Diameter: 6 inch 152.4 mm	Pitch: 4 inch 101.6 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"/>



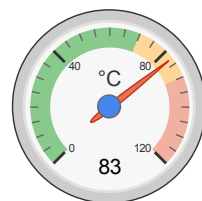
Load:



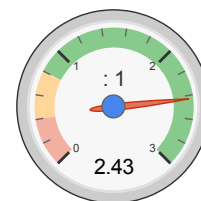
Mixed Flight Time:



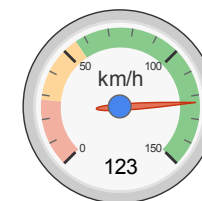
electric Power:



est. Temperature:



Thrust-Weight:



Pitch Speed:

Remarks:

- the prediction of the motor case temperature is critical (>80°C/175°F). Risk of overheat, please check!

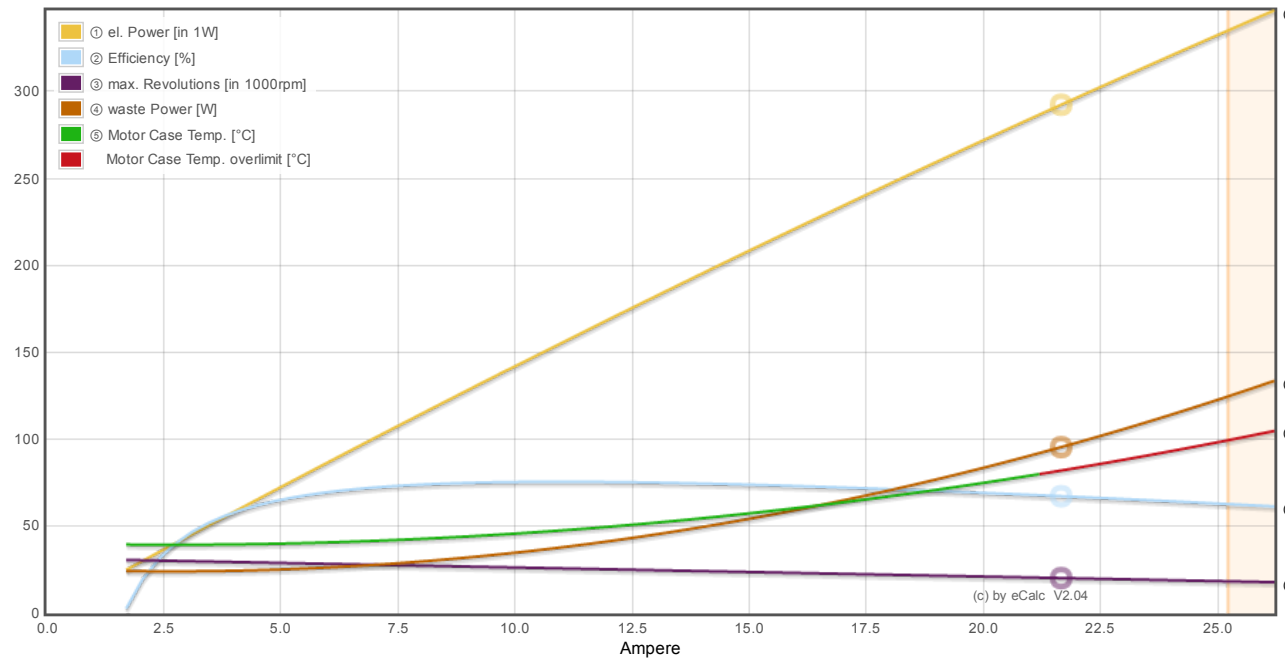
Battery	Motor @ Optimum Efficiency	Motor @ Maximum	Propeller	Total Drive	Airplane
Load: 13.65 C	Current: 10.44 A	Current: 21.84 A	Static Thrust: 997 g	Drive Weight: 275 g	All-up Weight: 410 g
Voltage: 13.66 V	Voltage: 14.17 V	Voltage: 13.48 V	35.2 oz	9.7 oz	14.5 oz
Rated Voltage: 14.80 V	Revolutions*: 26135 rpm	Revolutions*: 20187 rpm	Revolutions*: 20187 rpm	Power-Weight: 788 W/kg	Wing Load: 37 g/dm <sup>2</sup>
Energy: 23.68 Wh	electric Power: 148.0 W	electric Power: 294.5 W	Stall Thrust: 579 g	358 W/lb	12.1 oz/ft <sup>2</sup>
Total Capacity: 1600 mAh	mech. Power: 111.8 W	mech. Power: 197.6 W	20.4 oz	Thrust-Weight: 2.43 : 1	Cubic Wing Load: 11.2
Used Capacity: 1360 mAh	Efficiency: 75.6 %	Efficiency: 67.1 %	exc. Thrust @ 0 km/h: 997 g	P(in) @ max: 323.3 W	est. Stall Speed: 28 km/h
min. Flight Time: 3.7 min		est. Temperature: 83 °C	exc. Thrust @ 0 mph: 35.2 oz	P(out) @ max: 197.6 W	17 mph
Mixed Flight Time: 11.3 min		181 °F	Pitch Speed: 123 km/h	Efficiency @ max: 61.1 %	est. Speed (level): 110 km/h
Weight: 160 g			76 mph		68 mph
5.6 oz			Tip Speed: 580 km/h		est. Speed (vertical): 67 km/h
			360 mph		42 mph
			specific Thrust: 1.97 g/W		est. rate of climb: 18.7 m/s
			0.07 oz/W		3683 ft/min

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Propeller rpm	Throttle %	Motor Partial Load										Speed (level)		Motoring Time (85%) min
		Current (DC) A	Volage (DC) V	el. Power W	Efficiency %	Thrust g oz	Spec. Thrust g/W oz/W	Pitch Speed km/h mph	km/h	mph				
3000	11	0.1	14.8	1.5	42.6	22 0.8	14.7 0.52	18	11	-	-	803.2		
4500	16	0.2	14.8	3.6	59.2	50 1.7	13.6 0.48	27	17	-	-	330.5		
6000	22	0.5	14.8	7.5	67.7	88 3.1	11.7 0.41	37	23	-	-	159.2		
7500	28	0.9	14.8	13.9	71.8	138 4.9	9.9 0.35	46	28	41	25	86.2		
<b>9000</b>	<b>35</b>	<b>1.6</b>	<b>14.7</b>	<b>23.4</b>	<b>73.6</b>	<b>198 7.0</b>	<b>8.5 0.30</b>	<b>55</b>	<b>34</b>	<b>49</b>	<b>30</b>	<b>51.0</b>		
10500	42	2.5	14.7	36.9	74.1	270 9.5	7.3 0.26	64	40	57	35	32.2		
12000	49	3.8	14.6	55.2	73.8	352 12.4	6.4 0.22	73	45	65	40	21.4		
13500	57	5.5	14.5	79.3	73.2	446 15.7	5.6 0.20	82	51	73	46	14.8		
15000	65	7.7	14.4	110.1	72.4	550 19.4	5.0 0.18	91	57	81	51	10.6		
16500	74	10.5	14.2	148.5	71.4	666 23.5	4.5 0.16	101	63	90	56	7.7		
18000	83	14.1	14.1	195.8	70.3	792 27.9	4.0 0.14	110	68	98	61	5.8		
19500	94	18.5	13.8	252.9	69.2	930 32.8	3.7 0.13	119	74	106	66	4.4		
20187	100	21.8	13.7	294.5	67.1	997 35.2	3.4 0.12	123	76	110	68	3.7		

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 measurement!**

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

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