

548

Member Full Version

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

propCalc - Propeller Calculator



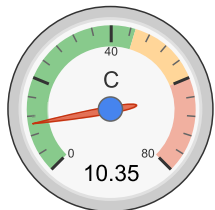
YouTube 325

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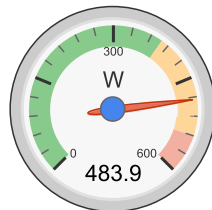
<b>General</b>	Model Weight: 850 g <input type="button" value="incl. Drive"/> <input type="button" value="▼"/> 30 oz	# of Motors: <input type="text" value="1"/> (on same Battery)	Wing Area: 50 dm² 775 in²	Drag: simplified ▼ 0.05 Cd	Cross Section: 0 dm² 0 in²	Field Elevation: 500 m ASL 1640 ft ASL	Air Temperature: 25 °C 77 °F	Pressure (QNH): 1013 hPa 29.91 inHg
<b>Battery Cell</b>	Type (Cont. / max. C) - charge state: LiPo 2200mAh - 45/60C ▼ - normal ▼	Configuration: 6 S 1 P	Cell Capacity: 2200 mAh 2200 mAh total	max. discharge: 85% ▼	Resistance: 0.0059 Ohm	Voltage: 3.7 V	C-Rate: 45 C cont. 60 C max	Weight: 58 g 2 oz
<b>Controller</b>	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
<b>Motor</b>	Manufacturer - Type (Kv) - Cooling: T-Motor ▼ - MN4010-11 (475) ▼ medium ▼ <input type="button" value="search..."/>	KV (w/o torque): 475 rpm/V <input type="button" value="Prop-Kv-Wizard"/>	no-load Current: 0.8 A @ 10 V	Limit (up to 15s): 540 W ▼	Resistance: 0.098 Ohm	Case Length: 30.5 mm 1.2 inch	# mag. Poles: 24	Weight: 112 g 4 oz
<b>Propeller</b>	Type - yoke twist: APC Electric E ▼ - 0° ▼	Diameter: 12 inch 304.8 mm	Pitch: 5 inch 127 mm	# Blades: 3	PConst / TConst: 1.08 / 1.0	Gear Ratio: 1 : 1	Flight Speed: 0 km/h 0 mph	<input type="button" value="calculate"/>



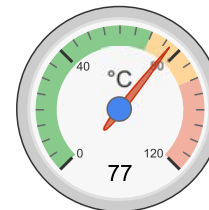
Load:



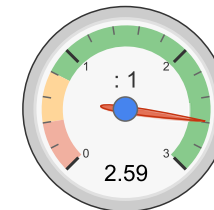
Mixed Flight Time:



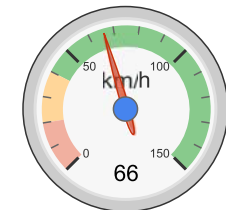
electric Power:



est. Temperature:



Thrust-Weight:



Pitch Speed:

**Remarks:**

Battery		Motor @ Optimum Efficiency		Motor @ Maximum		Propeller		Total Drive		Airplane	
Load:	10.35 C	Current:	17.76 A	Current:	22.76 A	Static Thrust:	2199 g	Drive Weight:	561 g	All-up Weight:	850 g
Voltage:	21.39 V	Voltage:	21.46 V	Voltage:	21.26 V		77.6 oz		19.8 oz		30 oz
Rated Voltage:	22.20 V	Revolutions*:	8967 rpm	Revolutions*:	8612 rpm	Revolutions*:	8612 rpm	Power-Weight:	595 W/kg	Wing Load:	17 g/dm²
Energy:	48.84 Wh	electric Power:	381.2 W	electric Power:	483.9 W	Stall Thrust:	- g		270 W/lb		5.6 oz/ft²
Total Capacity:	2200 mAh	mech. Power:	315.4 W	mech. Power:	398.0 W		- oz	Thrust-Weight:	2.59 : 1	Cubic Wing Load:	2.4
Used Capacity:	1870 mAh	Efficiency:	82.8 %	Efficiency:	82.3 %	avail. Thrust @ 0 km/h:	2199 g	Current @ max:	22.76 A	est. Stall Speed:	20 km/h
min. Flight Time:	4.9 min			est. Temperature:	77 °C	avail. Thrust @ 0 mph:	77.6 oz	P(in) @ max:	505.4 W		12 mph
Mixed Flight Time:	15.7 min				171 °F	Pitch Speed:	66 km/h	P(out) @ max:	398.0 W	est. Speed (level):	61 km/h
Weight:	348 g						41 mph	Efficiency @ max:	78.8 %		38 mph
	12.3 oz					Tip Speed:	495 km/h	Torque:	0.44 Nm	est. Speed (vertical):	38 km/h
							307 mph		0.32 lbf.ft		24 mph

Power: 486.8 W

specific Thrust:

4.54 g/W

est. rate of climb:

10.7 m/s

0.16 oz/W

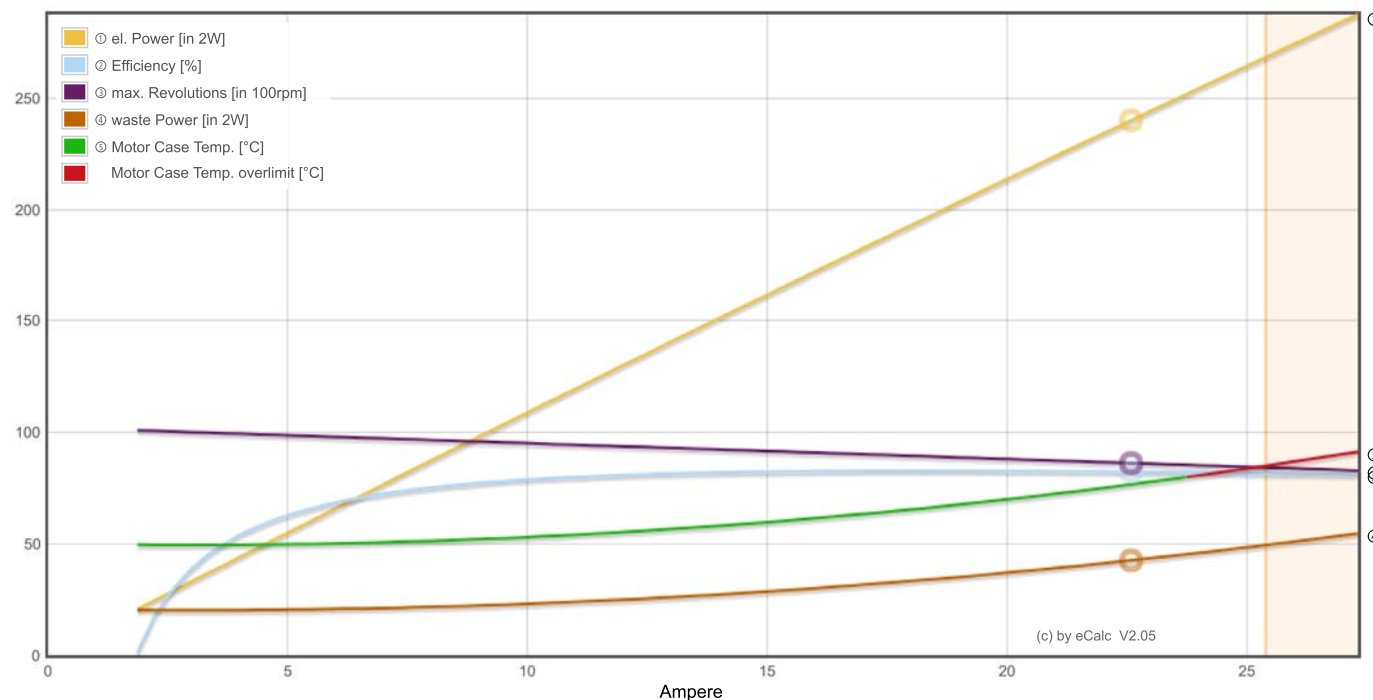
2104 ft/min

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## Motor Partial Load

Propeller	Throttle	Current (DC)	Voltage (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
1200	12	0.1	22.2	2.7	39.1	43	1.5	15.6	0.55	9	6	-	-	905.8
1800	18	0.3	22.2	6.3	57.7	96	3.4	15.3	0.54	14	9	-	-	395.8
2400	25	0.6	22.2	12.5	68.9	171	6.0	13.7	0.48	18	11	-	-	199.2
3000	31	1.0	22.2	22.2	75.4	267	9.4	12.0	0.42	23	14	-	-	111.5
3600	38	1.7	22.1	36.6	79.2	384	13.6	10.5	0.37	27	17	17	10	67.7
4200	44	2.6	22.1	56.5	81.4	523	18.4	9.3	0.33	32	20	30	19	43.7
4800	51	3.8	22.1	83.0	82.7	683	24.1	8.2	0.29	37	23	34	21	29.7
5400	58	5.3	22.0	117.2	83.4	865	30.5	7.4	0.26	41	26	38	24	21.0
<b>6000</b>	<b>65</b>	<b>7.3</b>	<b>21.9</b>	<b>160.1</b>	<b>83.8</b>	<b>1067</b>	<b>37.7</b>	<b>6.7</b>	<b>0.24</b>	<b>46</b>	<b>28</b>	<b>43</b>	<b>26</b>	<b>15.3</b>
6600	73	9.8	21.9	212.8	83.9	1292	45.6	6.1	0.21	50	31	47	29	11.5
7200	81	12.8	21.7	276.5	83.8	1537	54.2	5.6	0.20	55	34	51	32	8.8
7800	88	16.4	21.6	352.4	83.6	1804	63.6	5.1	0.18	59	37	55	34	6.8
8400	97	20.7	21.5	441.6	83.3	2092	73.8	4.7	0.17	64	40	60	37	5.4
8612	100	22.8	21.4	483.9	82.3	2199	77.6	4.5	0.16	66	41	61	38	4.9

## 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

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