



Member Full Version



YouTube 510

Welcome Cyrus

Membership Expiry: 30/07/19

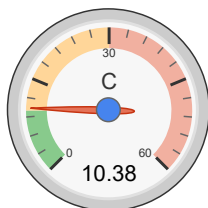
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all data without guarantee - Accuracy: +/-10%

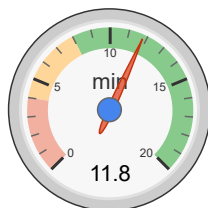
propCalc - Propeller Calculator

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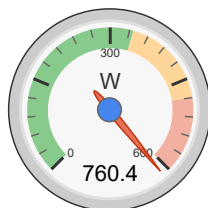
General	Model Weight: 1599 g <input type="text"/> <input type="text"/> incl. Drive <input type="text"/> 56.4 oz	# of Motors: <input type="text"/> (on same Battery)	Wing Area: 44 dm ² <input type="text"/> 682 in ² <input type="text"/>	Drag: simplified <input type="text"/> 0.05 Cd <input type="text"/>	Cross Section: 0 dm ² <input type="text"/> 0 in ² <input type="text"/>	Field Elevation: 150 m ASL <input type="text"/> 492 ft ASL <input type="text"/>	Air Temperature: 25 °C <input type="text"/> 77 °F <input type="text"/>	Pressure (QNH): 1013 hPa <input type="text"/> 29.91 inHg <input type="text"/>
Battery Cell	Type (Cont. / max. C) - charge state: custom <input type="text"/> - normal <input type="text"/>	Configuration: 4 S <input type="text"/> 1 P <input type="text"/>	Cell Capacity: 5200 mAh <input type="text"/> 5200 mAh total <input type="text"/>	max. discharge: 85% <input type="text"/>	Resistance: 0.0022 Ohm <input type="text"/>	Voltage: 3.7 V <input type="text"/>	C-Rate: 10 C cont. <input type="text"/> 30 C max <input type="text"/>	Weight: 140 g <input type="text"/> 4.9 oz <input type="text"/>
Controller	Type: max 60A <input type="text"/>	Current: 60 A cont. <input type="text"/> 60 A max <input type="text"/>	Resistance: 0.0045 Ohm <input type="text"/>	Weight: 80 g <input type="text"/> 2.8 oz <input type="text"/>	Battery extension Wire: AWG10=5.27mm ² <input type="text"/>	Length: 0 mm <input type="text"/> 0 inch <input type="text"/>	Motor extension Wire: AWG10=5.27mm ² <input type="text"/>	Length: 0 mm <input type="text"/> 0 inch <input type="text"/>
Motor	Manufacturer - Type (Kv) - Cooling: EMAX <input type="text"/> - GT2815-06 (1280) <input type="text"/> medium <input type="text"/> <input type="text"/> search...	KV (w/o torque): 1280 rpm/V <input type="text"/> Prop-Kv-Wizard <input type="text"/>	no-load Current: 1.8 A @ 11.1 V <input type="text"/>	Limit (up to 15s): 480 W <input type="text"/>	Resistance: 0.028 Ohm <input type="text"/>	Case Length: 38 mm <input type="text"/> 1.5 inch <input type="text"/>	# mag. Poles: 14 <input type="text"/>	Weight: 120 g <input type="text"/> 4.2 oz <input type="text"/>
Propeller	Type - yoke twist: APC Electric E <input type="text"/> - 0° <input type="text"/>	Diameter: 9 inch <input type="text"/> 228.6 mm <input type="text"/>	Pitch: 6 inch <input type="text"/> 152.4 mm <input type="text"/>	# Blades: 2 <input type="text"/>	PConst / TConst: 1.08 / 1.0 <input type="text"/>	Gear Ratio: 1 : 1 <input type="text"/>	Flight Speed: 0 km/h <input type="text"/> 0 mph <input type="text"/>	<input type="button" value="calculate"/>



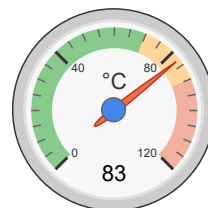
Load:



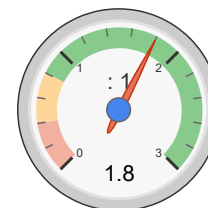
Mixed Flight Time:



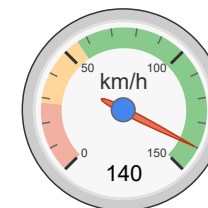
electric Power:



est. Temperature:



Thrust-Weight:



Pitch Speed:

Remarks:

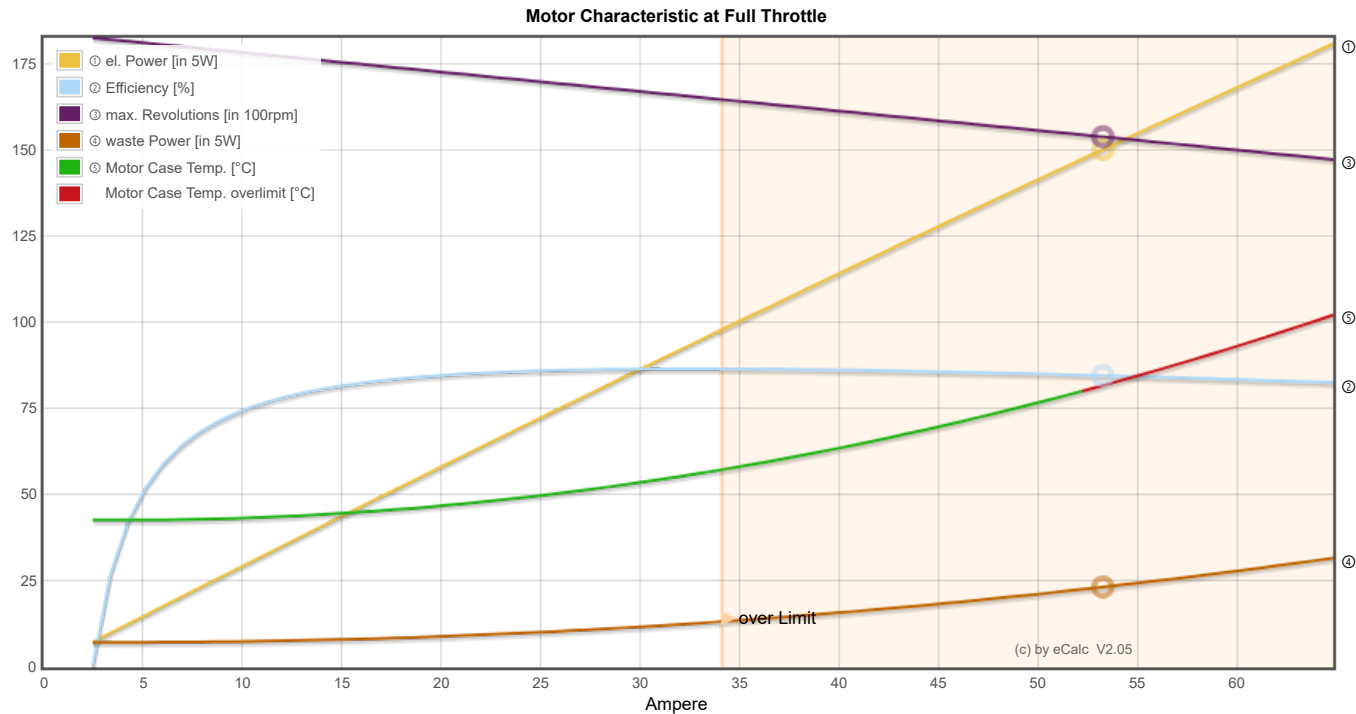
- The Motor Voltage is close or over to the Limit - please verify the max. allowed Motor Voltage / cell count
- max. power over the limit of the motor. Please check the max. power limits defined by the manufacturer! (electric Power: 760.4 W > Limit (up to 15s): 480 W)
- the prediction of the motor case temperature is critical (>80°C/175°F). Risk of overheat, please check!

Battery	Motor @ Optimum Efficiency	Motor @ Maximum	Propeller	Total Drive	Airplane
Load: 10.38 C	Current: 31.50 A	Current: 54.00 A	Static Thrust: 2882 g	Drive Weight: 836 g	All-up Weight: 1599 g
Voltage: 14.32 V	Voltage: 14.38 V	Voltage: 14.08 V	101.7 oz	29.5 oz	56.4 oz
Rated Voltage: 14.80 V	Revolutions*: 16595 rpm	Revolutions*: 15324 rpm	Revolutions*: 15324 rpm	Power-Weight: 500 W/kg	Wing Load: 36 g/dm ²
Energy: 76.96 Wh	electric Power: 453.1 W	electric Power: 760.4 W	Stall Thrust: 1675 g	227 W/lb	11.8 oz/ft ²
Total Capacity: 5200 mAh	mech. Power: 391.8 W	mech. Power: 641.7 W	59.1 oz	Thrust-Weight: 1.80 : 1	Cubic Wing Load: 5.5
Used Capacity: 4420 mAh	Efficiency: 86.5 %	Efficiency: 84.4 %	avail. Thrust @ 0 km/h: 2882 g	Current @ max: 54.00 A	est. Stall Speed: 28 km/h
min. Flight Time: 4.9 min		est. Temperature: 83 °C	avail. Thrust @ 0 mph: 101.7 oz	P(in) @ max: 799.2 W	17 mph
Mixed Flight Time: 11.8 min		181 °F	Pitch Speed: 140 km/h	P(out) @ max: 641.7 W	est. Speed (level): 123 km/h
Weight: 560 g			87 mph	Efficiency @ max: 80.3 %	76 mph
19.8 oz			Tip Speed: 660 km/h	Torque: 0.40 Nm	est. Speed (vertical): 59 km/h
			410 mph	0.3 lbf.ft	37 mph
		Wattmeter readings			
		Current: 54 A			
		Voltage: 14.32 V			

Power: 773.3 W specific Thrust: 2.20 g/W est. rate of climb: 16.3 m/s
 0.08 oz/W 3203 ft/min

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Propeller rpm	Throttle %	Motor Partial Load										Speed (level)		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			
2200	13	0.3	14.8	3.9	48.5	59	2.1	15.2	0.54	20	13	-	-	1000.8
3300	19	0.7	14.8	9.6	66.4	134	4.7	13.9	0.49	30	19	-	-	405.8
4400	25	1.4	14.8	19.9	75.9	238	8.4	11.9	0.42	40	25	-	-	195.5
5500	32	2.5	14.8	36.5	81.0	371	13.1	10.2	0.36	50	31	44	27	106.6
6600	39	4.2	14.8	61.0	83.7	535	18.9	8.8	0.31	60	38	53	33	63.6
7700	46	6.5	14.7	95.3	85.2	728	25.7	7.6	0.27	70	44	62	38	40.7
8800	53	9.7	14.7	141.0	85.9	950	33.5	6.7	0.24	81	50	71	44	27.4
9900	60	13.8	14.7	200.1	86.2	1203	42.4	6.0	0.21	91	56	80	49	19.2
11000	68	19.0	14.6	274.5	86.2	1485	52.4	5.4	0.19	101	63	88	55	14.0
12100	75	25.5	14.6	366.1	86.0	1797	63.4	4.9	0.17	111	69	97	60	10.4
13200	83	33.4	14.5	477.0	85.7	2138	75.4	4.5	0.16	121	75	106	66	7.9
14300	92	42.9	14.4	609.2	85.3	2509	88.5	4.1	0.15	131	81	115	71	6.2
15324	100	54.0	14.3	760.4	84.4	2882	101.6	3.8	0.13	140	87	123	77	4.9



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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Version: P7.111, 20.6.18 / Data: 12.7.18 with 8802 Motors

translated to english by Markus Mueller

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