



# Propellers test





Parameters controlled:

- Consumption in amps
- Revolutions per minute
- Volts on the battery
- Thrust in real grams on the structure of the drone



## Propeller Nr1 6045





## Propeller Nr2 ref. 6030





## Propeller Nr 3 5045 3B







## Propeller Nr4 5045 BN 3B





# Propeller Nr5 5045 Drone





# Propeller Nr6 5045 High Efficiency







# Propeller Nr7 5030





- Calculations

Volts  $\rightarrow$   
Amps  $\rightarrow$  Power consumption (w) = Volts \* Amps

Thrust (g).

Efficiency = Thrust (g)/Power consumption (w)

When r.p.m. is constant  $\rightarrow$  10.000 r.p.m.  
 $\rightarrow$  15.000 r.p.m.



## Tests

Propellers	Diameter	Pitch	Colour	Amps	Thrust (g)	rpm	Volts	Power (w)	Efficiency gr/w	Average Ef	Average Ef	Average T(g)
6045L	152.4	114.3	Verde	4.6	270	10000	12	55.2	4.9	4.3	4.7	273.5
				11.5	500	15000	12	138.0	3.6			
6030	152.4	76.2	Negra	1.4	99	10000	12.2	17.1	5.8	5.1		
				4.1	225	15000	12.2	50.0	4.5			
5045 3B	127	114.3	Verde	2.1	108	10000	12	25.2	4.3	4.1		
				6.9	320	15000	12	82.8	3.9			
5045 BN 3B	127	114.3		2.9	204	10000	11.9	34.5	5.9	4.9	4.5	260
				8.8	408	15000	11.9	104.7	3.9			
5045 Drone	127	114.3	Verde	1.2	75	10000	12.6	15.1	5.0	4.6		
				3.9	208	15000	12.6	49.1	4.2			
5045 BN	127	114.3	Negra	1.6	114	10000	12.5	20.0	5.7	5.1	4.9	155.2
				5.1	293	15000	12.5	63.8	4.6			
5030	127	76.2	Verde	1.1	66	10000	12.5	13.8	4.8	4.9		
				2.8	175	15000	12.5	35.0	5.0			



Premises and conclusions:

The thrust on the structure of the drone and the measurements are absolutely real

	rpm	Blades	Thrust	Efficency
Lower speed higher efficiency	10000 → 15000 (50%↑)			5.2 → 4.2 (20%↓)
Two blades are more efficient		2B → 3B		4.9 → 4.5 (8% ↓)
Three blades are more powerful		2B → 3B	155.2 → 260 (68%↑)	
Higher diameter more powerful		φ 5" → φ 6"	155.2 → 273.5 (76%↑)	