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Test DUALSKY EG500 / EG700 motors

Version 2 (10/2026)

Introduction:

The V2 of the test campaign report now includes the complete line of Dualsky EG500/EG700 motors, designed and optimized for F5J competition electric gliders.

I performed an extensive test campaign to validate correct behavior of the motors and measure the performances with different batteries and propellers. Another aim is to propose the optimal motor/propeller combination for F5J use, validated in real conditions.

The motors EG500.16, EG700.10 and EG700.14 were tested at preproduction status.
The motors EG500.14 and EG700.12 are now included in the report, tested at series status.



Visual inspection:

The EG500/700 motors are capsulated outrunner brushless motors with weight and size optimization compared to the XM EG30xx series. It's a completely new design.
A combination of satin black and golden parts gives a high-quality finish.
Mounting screws pattern remains the now standard "M3 16/19mm".
The front part is designed to fit in the slimmer fuselages and allows an easy mounting on 30mm spinner F5j models.
The openwork capsule reduces the weight and improves the ventilation. The design is great.
The 5mm shaft is 3mm hollowed (vs 2.1mm on XM 30xx EG) and now splined (anti-slip grooves).

Data of the motors tested:

	EG500.14	EG500.16	EG700.10	EG700.12	EG700.14
Weight (including conectors)	72g		87g		
Max peak current (Dualsky)	43A	40A	54A	48A	44A
Max peak power (Dualsky)	516W	480W	648W	576W	704W
Max diameter (rear flange)	29,5mm				
Lenght	36,8mm		41,8mm		
Stator size	2212		2217		
Number of poles	14				
KV	1480	1300	1460	1220	1050
Fixing points	2 x M3 at 16mm + 2 x M3 at 19mm				
Shaft type	5mm hollowed (3mm) and splined + 1 flat area				
Shaft lenght	17mm				

Motor/ESC combo weight:

	ESC directly soldered to motor	Motor/ESC with original cable and plugs
EG500 + Summit 30X	87g	
EG500 + Summit 60Slim	97g	106g
EG700 + Summit 30X	102g	
EG700 + Summit 60Slim	112g	121g
EG700 + Summit 60X	119g	128g

Test equipment:

For the measurements in flight, I used a Dualsky telemetry adapter (Telelink), linked to a Futaba T18SG transmitter (1Hz logging) and altimeter Altis Nano (10Hz logging). A temperature sensor connected to the Telelink has been installed at the rear part of the capsule.



Temperature sensor

The motors were controlled by a Dualsky Summit 60Slim or 60X U8 ESC, with automatic timing.

As the target of EG500 motors is Light or Superlight F5J models, I used my trusty Volo Light (1.150g AUW).

For the EG700 motors, as the target is Light to Standard F5J models, I used a Berkut Standard (1400g AUW), closer to the worst case in terms of weight.

	VOLO Light	BERKUT Standard
Wing span	3975mm	3990mm
FAI surface	88,78dm^2	94,8 dm^2
FAI Wing load	12,9 g/dm^2	14,8 g/dm^2
Testing weight	1150g	1400g
ESC	Dualsky Summit 60Slim U8	Dualsky Summit 60X U8

The propeller of each manufacturer was mounted on a spinner/hub from the same brand:

Propeller	DFP	CN Models	GM propellers
Spinner / hub	Dualsky FPS 32mm	*CN-U 32mm*	*GM 32mm*
Hub type	Z	*Z*	*Straight*
Distance between pins (mm)	27	*28,5*	*28*

Important note: Dualsky DFP propellers' nominal size is for a 42mm hub size. Remember that using it on a 27mm hub reduces both real diameter and pitch.

The following propellers were available for the test campaign:

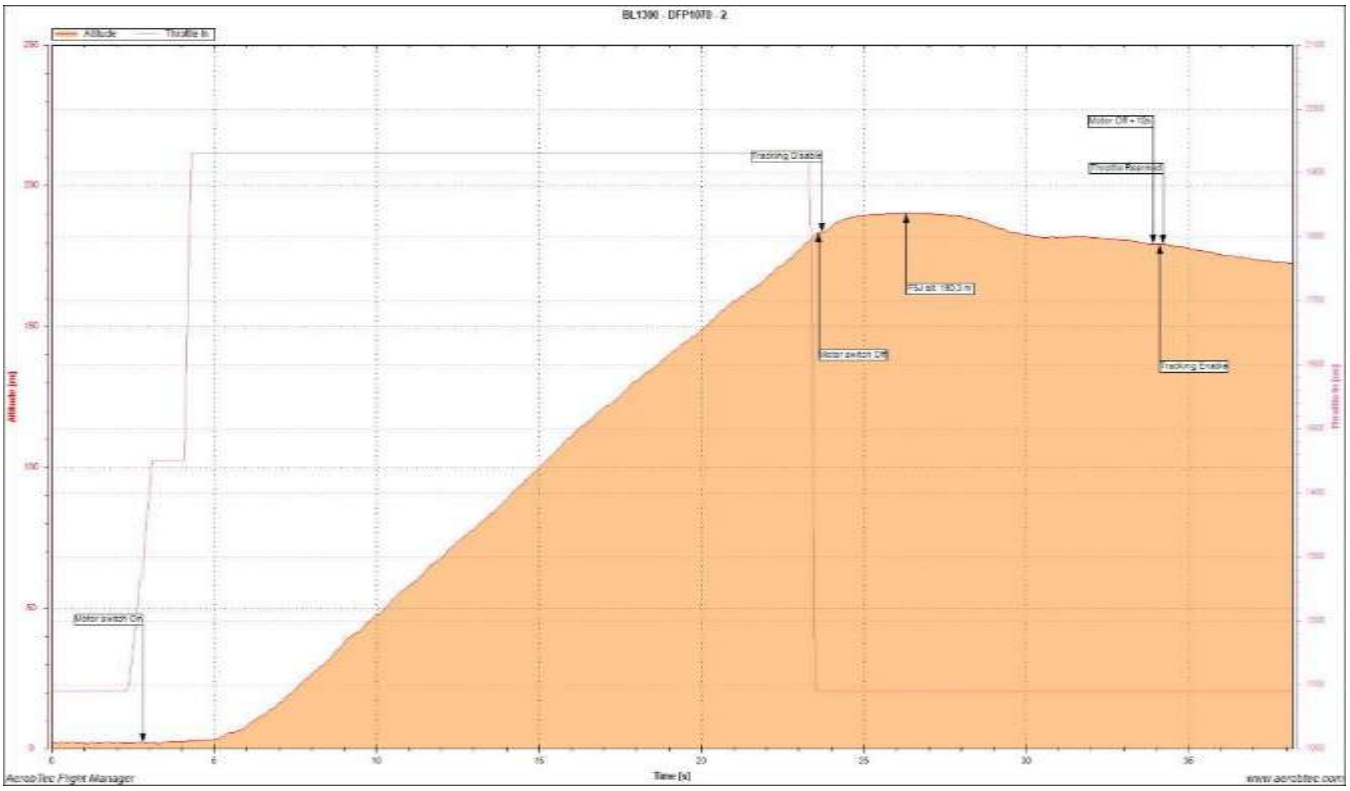
- Dualsky: DFP8560, DFP 9065 and DFP1070
- CN Models: 9x7, 10x6, 10x8* and 11x8* (*: only available for EG500.14 and EG700.12 tests)
- GM propellers: 10x6, 11x6 and 11x8



Test procedure:

Tests were performed in calm weather, with ambient temperature between 8 and 18ºC, at 200m A.S.L.
To maximize the data accuracy, I performed between 2 and 6 ascents per configuration, always with a fresh battery warmed at 20-25ºC.
The flight test sequence is:

- Launch from standstill with soft arm impulse at half throttle
- 2 seconds at 50% throttle without gaining altitude
- 20 seconds at full throttle on the best climb gradient, as constant as possible. Zoom after motor off is not included in the measurements.



With every configuration, some additional flights were performed to subjectively valuate the grip and behavior at throttle changes, and simulating competition flights.

Data results summary:

EG500.16 with 3S batteries:

Model	Volo Light (1150g) F5J					
Motor	Dualsky EG500.16					
Battery	Dualsky ULT 3S 600mAh					
Propeller	DFP 10x7	CN 10x6	CN 9x7	GM 10x6	GM 11x6	GM 11x8
Max. RPM	9700	10050	9875	9400	8830	7700
Avg. RPM in 20s climb	9500	9700	9625	9150	8670	7450
Max. current (A)	30	27,6	28,4	33,5	34,8	41,3
Avg. current (A) in 20s climb	26,7	25,5	26,5	30	31,1	38
Max. absorbed power (W)	300	275	285	330	330	390
Avg. absorbed power (W) in 20s climb	275	260	270	300	305	360
Max. climb rate (m/s)	10,2	9,3	9,8	10,3	11,2	12,8
Avg. climb rate (m/s) in 20s climb	9	8,4	9	9,4	10,7	11,1

Both CN 9x7 and DFP1070 give an excellent "climb rate per absorbed power" ratio. The traction and speed are suitable for a F5J SL or Light model. The grip is also very good.

CN 10x6 is less power consuming and gives logically slightly lower performance. Suitable for Superlight FAI models.

GM 10x6 is still a good option (good grip and climb rate) but with a higher current.

GM 11x6 gives more traction and climb rate but the speed is lower and not optimum for F5J competition use.

GM 11x8 is slightly too big for this motor. Max peak of current is over the specs. The temperature of the capsule after a 20s run increase 41ºC (from 17ºC to 58ºC). Not recommended.



EG500.16 with 4S batteries:

Model	Volo Light (1150g) F5J			
Motor	Dualsky EG500.16			
Battery	Dualsky ULT 4S 480mAh			
Propeller	DFP 8,5x6	DFP 9x6,5	DFP 10x7	CN 10x6
Max. RPM	13650	12500	11325	11800
Avg. RPM in 20s climb	13100	12000	10700	11200
Max. current (A)	27,5	31	34,3	36,9
Avg. current (A) in 20s climb	24,1	28,2	32,5	31,3
Max. absorbed power (W)	350	380	410	470
Avg. absorbed power (W) in 20s climb	315	350	385	390
Max. climb rate (m/s)	11,2	11,4	12,4	13,1
Avg. climb rate (m/s) in 20s climb	10,1	10,6	12,1	12,1

DFP9065 and DFP1070 give outstanding performance both on climb rate and throttle response.

With DFP8560, the performance is still about 10% higher than the best 3S options, but the acceleration of the model is not as immediate. Not optimum.

CN 10x6 pulls more current and gives better performances than DFP1070 (contrary to the behavior with 3S). It is close to the max power limit. I observed a relevant battery sag of the small 4S480mAh battery, that drops below 3V/cell.

Performances would be higher using a battery with more capacity (less C, less voltage sag)



EG500.14 with 3S batteries:

Model	Volo Light (1150g) F5J				
Motor	Dualsky EG500.14				
Battery	Dualsky ULT 3S 600mAh				
Propeller	DFP 10x7	CN 10x6	CN 9x7	GM 10x6	CN 10x8
Max. RPM	10650	10700	10650	10040	9060
Avg. RPM in 20s climb	10200	10300	10190	9550	8640
Max. current (A)	36,2	33,9	36,9	39	46
Avg. current (A) in 20s climb	33,6	30,8	32,7	36,9	40
Max. absorbed power (W)	380	340	380	400	415
Avg. absorbed power (W) in 20s climb	345	303	326	365	377
Max. climb rate (m/s)	12	10,5	9,8	12,2	11,9
Avg. climb rate (m/s) in 20s climb	11,3	9,5	9,2	10,7	10,7

This motor was only tested with 3S batteries.

DFP1070 and GM 10x6 give the best performance both on climb rate and throttle response.
CN 10x6 gives slightly lower performance but is still perfectly valid for a Light F5J model.
CN 9x7 does not show optimal results with this motor.
CN 10x8 is too big for this motor. Max peak of current is over the specs. Not recommended.



EG700.10 with 3S batteries:

Model	Berkut Standard 1400g				
Motor	Dualsky EG700.10				
Battery	Dualsky ULT 3S 900mAh				
Propeller	DFP 10 x 7	CN 10 x 6	CN 9x7	GM 10 x 6	GM 11 x 6
Max. RPM	10680	11175	10800	10200	9840
Avg. RPM in 20s climb	10270	10670	10400	9785	9400
Max. current (A)	43,4	41,2	42,6	47,5	53,5
Avg. current (A) in 20s climb	39,2	37,3	38,5	43,2	47,5
Max. absorbed power (W)	415	405	410	450	500
Avg. absorbed power (W) in 20s climb	375	365	370	410	450
Max. climb rate (m/s)	11,8	10,6	10,5	12	12,9
Avg. climb rate (m/s) in 20s climb	10,6	9,7	9,6	11,2	12

GM10x6 and DFP1070 give excellent performance. The grip is very good.

CN 10x6 and 9x7 give slightly less performance.

GM 11x6 gives more traction but less speed. The maximum peak current is close to the limit and the increase of the temperature after a 20s run is too high (+45°C, from 14°C to 59°C). It may be critical with hotter ambient temperature.



EG700.10 with 4S batteries:

Model	Berkut Standard 1400g				
Motor	Dualsky EG700.10				
Battery	Dualsky ULT 4S 900mAh				
Propeller	DFP 9 x 6,5	CN 10 x 6			
Max. RPM	13520	12640			
Avg. RPM in 20s climb	13100	12400			
Max. current (A)	47,5	51,9			
Avg. current (A) in 20s climb	43,9	46,6			
Max. absorbed power (W)	570	610			
Avg. absorbed power (W) in 20s climb	535	550			
Max. climb rate (m/s)	14,5	14,8			
Avg. climb rate (m/s) in 20s climb	13,2	14			

DFP9065 shows excellent performance both on climb rate and throttle response. CN10x6 gives also outstanding results but the temperature of the capsule after a 20s run increases very fast to high values (+48ºC). Limited for conscious short runs.



EG700.12 with 3S batteries:

Model	Berkut Hybrid 1350g				
Motor	Dualsky EG700.12				
Battery	Dualsky ULT 3S 900mAh				
Propeller	DFP 10 x 7	GM 10x6	GM 11x6	CN 10x8	CN 11 x 8
Max. RPM	10040	10200	9460	9220	8390
Avg. RPM in 20s climb	9770	9800	9050	8910	8080
Max. current (A)	28,4	34	40,9	42,4	49
Avg. current (A) in 20s climb	27,1	31,1	38,1	37,7	42,9
Max. absorbed power (W)	300	345	430	460	510
Avg. absorbed power (W) in 20s climb	290	300	360	400	430
Max. climb rate (m/s)	9,9	10,2	10,1	11,1	10,8
Avg. climb rate (m/s) in 20s climb	9,3	9,8	9,2	10,6	10,1

DFP1070 and GM 10x6 give a good ratio performance/absorbed power and will be a great option for Light F5J models (for example if a heavier motor than EG500 is needed)
CN 10x8 gives great performance for empty Standard models, with excellent speed.
GM 11x6 offers better traction but the speed is not optimum for modern F5J models.
CN 11x8 is too big (current peak over the specs) and the ratio performance/absorbed power is poor.



EG700.12 with 4S batteries:

Model	Berkut Hybrid 1350g				
Motor	Dualsky EG700.12				
Battery	Dualsky ULT 4S 900mAh				
Propeller	DFP 9 x 6,5	CN 10 x 6	CN 9x7	GM 10x6	
Max. RPM	13625	12630	12565	11900	
Avg. RPM in 20s climb	13250	12420	12100	11580	
Max. current (A)	36,8	38,9	42	49	
Avg. current (A) in 20s climb	34,7	35,4	38,4	43,5	
Max. absorbed power (W)	520	525	565	650	
Avg. absorbed power (W) in 20s climb	495	470	525	560	
Max. climb rate (m/s)	13,4	13,1	13,8	15,2	
Avg. climb rate (m/s) in 20s climb	12,6	12,4	13,2	14,2	

Both DFP9065, CN 9x7 and CN 10x6 give outstanding performance, suitable for Standard F5J models, including ballast up to 1900g.
GM 10x6 gives even better performance but slightly above the specs. The temperature of the capsule increases quickly to critical values. Limited for conscious short runs. Not recommended.



EG700.14 with 4S batteries:

Model	Berkut Standard 1400g					
Motor	Dualsky EG700.14					
Battery	Dualsky ULT 4S 900mAh					
Propeller	DFP 10 x 7	CN 10 x 6	CN 9x7	GM 10 x 6	GM 11 x 6	GM 11 x 8
Max. RPM	11070	11100	11140	10460	10030	9025
Avg. RPM in 20s climb	10900	10840	10980	10285	9620	8760
Max. current (A)	30	26,8	28,5	33,4	34,7	48
Avg. current (A) in 20s climb	26,9	24,6	26,6	29,3	30,5	40
Max. absorbed power (W)	420	362	400	430	463	635
Avg. absorbed power (W) in 20s climb	370	335	370	395	405	505
Max. climb rate (m/s)	11,7	10,4	11,4	12,7	12,6	15,7
Avg. climb rate (m/s) in 20s climb	10,9	9,7	10,7	10,4	11,9	12,7

This motor was only tested with 4S batteries.

DFP1070, CN9x7 and GM10x6 give the best performance, ideal for F5J models up to 1500g. CN 10x6 is less power demanding. Probably a good option for lighter models and smaller batteries.

GM11x6 gives more traction and climb rate but the speed is not as good as the first 3 options.

GM11x8 loads the motor over the maximum peak current. The temperature of the cage increases quickly. Not recommended.



Conclusions:

Over 180 flights were performed during this test campaign.

No failures nor defects were observed. The new EG motors have an outstanding design and quality. The fitting of the Dualsky and GM collets on the splined shaft is perfect. The CN collet tends to stay stuck (need forcing a bit to disassemble).

EG500

The weight of the EG500 (72g) is excellent. In combo with Summit30X ESC, it makes a perfect sub100g powerset. It's the best choice for Light or FAI Limit F5J models (between 1000 and 1250g), even with ballast.
EG500.16 can be used with 3S or 4S batteries.
With 3S batteries, DFP1070, CN 9x7 and GM10x6 are the best options.
With 4S batteries, DFP9065 is excellent. DFP1070 can also be used if full load climb is limited to a single short time run (10-15s).
Note: I used the EG500.16 + 4S480mAh + DFP9065 the whole 2026 season on a CN-Models Sensor Light (1060g) and I'm fully satisfied.

EG500.14 is designed to be used with 3S batteries.
DFP1070 and GM 10x6 give the best performance.

EG700

EG700 (87g) line aims from "Light on steroids" to Standard layup F5J models.
EG700.10 can be used with 3S and 4S batteries.
With 3S and GM10x6 or DFP1070, it's excellent for powerful Light F5J models.
With 4S and DFP9065 it's a good powerset for ballasted Light and empty Standard models.

EG700.12 can be used with 3S and 4S batteries.
With 3S, DFP1070 and GM 10x6 are a good option for Light F5J models and with CN 10x8 gives it is suitable for empty Standard models.
With 4S, DFP9065, CN 9x7 and CN 10x6 give outstanding performance for Standard F5J models, including fully ballasted.

EG700.14 has a KV for a 4S batteries use.
It gives outstanding results with DFP1070, CN9x7 and GM10x6 for overpowered Light and Standard F5J models.
Note: I used the EG700.14 with 4S900mAh and GM10x6 the whole 2026 season on a CN-Models Sensor Standard (1380g). The behavior is perfect, even with 600g of ballast.

Here is a summary of my recommendations:

F5J model type	Battery	Motor	Recommended propellers	ESC
FAI Limit (1000-1200g)	3S	EG500.16	DFP1070, CN 9x7, CN 10x6	Summit 30X
	4S	EG500.16	DFP9065	Summit 30X
Light (1100-1300g)	3S	EG500.14 EG700.12	DFP1070, GM10x6 DFP1070	Summit60Slim Summit 30X
	4S	EG500.16	DFP9065, DFP1070(*)	Summit60Slim
Light on steroids (1200 to 1500g ballasted)	3S	EG700.10 EG700.12	DFP1070, GM10x6 CN10x8	Summit60Slim
	4S	EG700.14	DFP1070, CN9x7, GM 10x6	Summit 30X
Standard (1300 to 1800g ballasted)	3S	EG700.10	DFP1070, GM10x6	Summit60Slim
	4S	EG700.10 EG700.12 EG700.14	DFP9065, CN10x6(*) DFP9065, CN9x7 GM10x6	Summit60Slim

(*) with short full load motor runs, followed by a cooling-down phase

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