

## **E-Props : the best propeller for the CTLS**

At this time, the 3-blades E-PROPS DURANDAL 100-M propeller is **the best propeller's choice** for the ultralight FLIGHT DESIGN CTLS (all versions).



A detailed comparative has been realized on the CTLS equipped with a Rotax 912S engine (100 hp) between the standard composite 3-blades NEUFORM diameter 165 cm and the E-Props 3-blades propeller DURANDAL 100-M (diameters 170 or 175 cm depending on CTLS versions).

Here are the results.

### **1- Weight : total saving = 3,4 kg**

The E-PROPS weights **3,2 kg less** than the 3-blades NEUFORM. Many advantages of a light propeller are described here : <http://www.e-props.fr/16/lightpropA.php>

The saved weight on the complete spinner DURANDAL versus NEUFORM same diameter is : 0,2 kg.



It is possible to save a total of 3,4 kg in mounting an E-Props instead the standard NEUFORM propeller.

**3,4 kg = 4,7 liters fuel SP98 = an additional distance of 50 km**

## 2- Performances

The E-PROPS propeller allows to reach the best performances with the CTLS, thanks to a strong **ESR effect** (explanations here : [http://www.e-props.fr/16/ESR\\_A.php](http://www.e-props.fr/16/ESR_A.php)).

This ESR effect has the following characteristics : it causes very small gap between the static RPM and the flight RPM, and this allows to keep a strong power at take-off.

It seems that the max throttle RPM stays nearly constant.

For example :

- take-off, engine full throttle : 5.400 RPM
- horizontal flight, max speed, engine full throttle : 5.500 RPM

The measured gains with respect to the NEUFORM standard 3-blades propeller are :

- **50-55 m** in take-off distance
- **300 - 350 ft/min** in rate of climb
- between **10 and 15 km/h** in cruise speed
- fuel economy : about **6%** in flying school use

Many pilots who have tried an E-Props propeller on their CTLS have been pleasantly surprised by the performances, **very close to the performances of an inflight variable pitch propeller.**

For more data, see page : <http://www.e-props.fr/16/FtestA.php>

## 3- Strength

The E-PROPS propeller is very strong. The blades are made in a high strength carbon braid, with a leading edge protection in Nanostrength®. More details on fabrication and leading edge protection :

<http://www.e-props.fr/16/fabA.php> / <http://www.e-props.fr/16/blindageA.php>

The hub is also full carbon. With a E-PROPS propeller, it is not possible to have cracks in the aluminium hubs, as those encountered by NEUFORM on their hubs in 2016 in England on IKARUS C42.

Centrifugal load tests are realized on each E-PROPS model.

Results : **safety coefficient = 7,2**. The whole system "carbon hub + blade" can hold **6 times** the maximal load during 1 hour without any damages (EASA CS-P asks only 2 times for certified propellers). At E-PROPS, security is the most important factor.

More data : <http://www.e-props.fr/16/GtestA.php>

## 4- Vibration free

The E-PROPS propeller do not generate vibrations, thanks to a fine balancing of the whole propeller (blades and hub) => an exceptional comfort for the pilot and the passenger, and a longer lifespan for some aircraft's accessories (reducer, silent-blocks, ...).

## 5- Savings of money

◆ For a new set of "propeller + spacer + spinner and flange" with necessary accessories (Rotax drive lugs, protractor), **the 3-blades E-PROPS costs 85 € less than the 3-blades NEUFORM**

◆ An E-Props propeller has a TBO = 2.000 hours, against 1.500 hours for the NEUFORM. The E-PROPS choice will save about 6% fuel, thanks to the E-Props high efficiency with thin chord. It means about 3.500 € only on fuel, and also some savings on engine accessories (less charged with a very light propeller).

**You are flying with a CTLS ?  
Try a E-Props Durandal 100-M propeller, and increase  
performances, range, comfort and security  
of your aircraft !**



"TEST YOUR PROPELLER DURING 6 MONTHS" : if you are not satisfied, E-PROPS reimburses you

**Satisfaction Guaranteed  
...or your money back**

**... because our team is sure of the quality and performances of its propellers !**