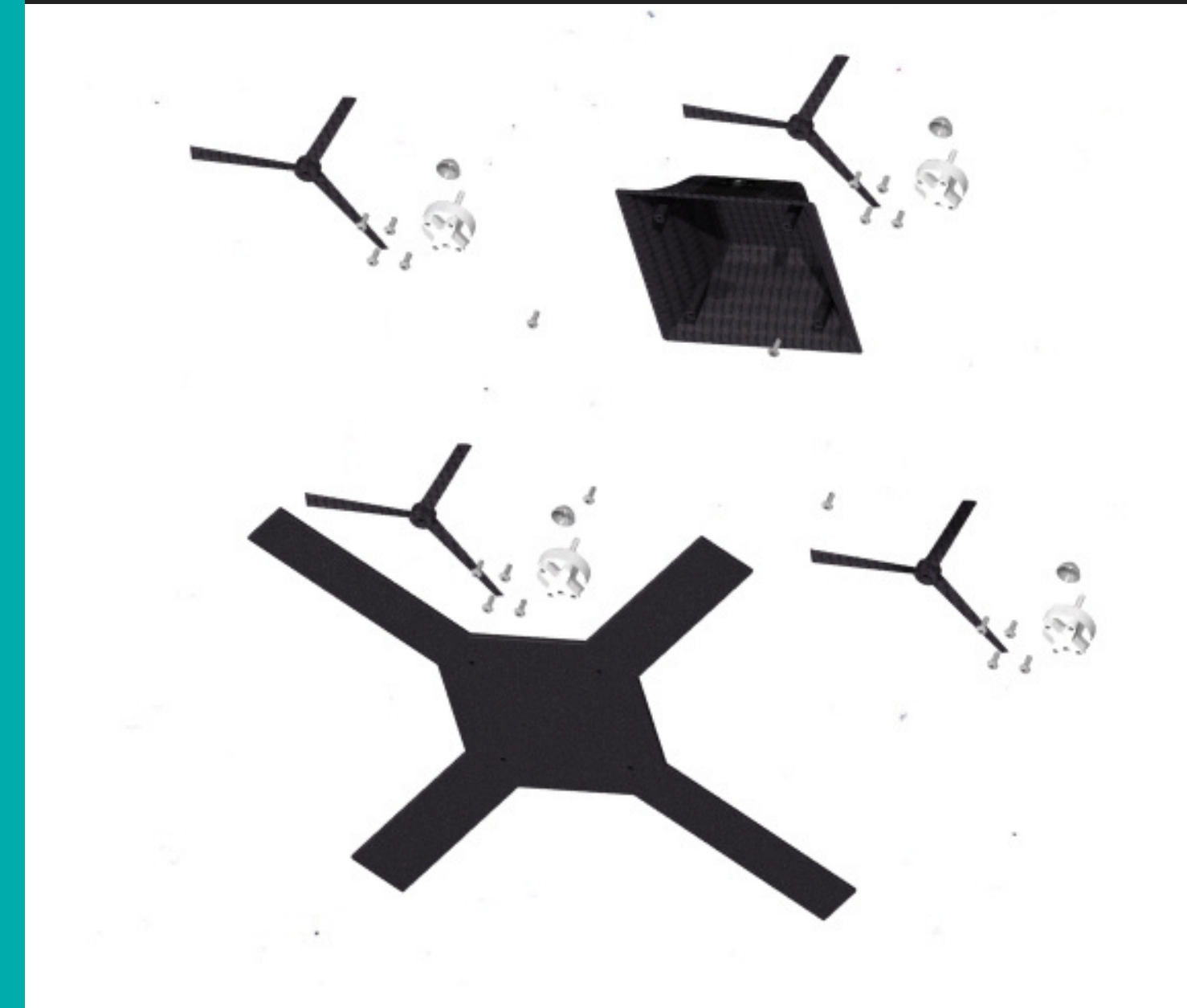


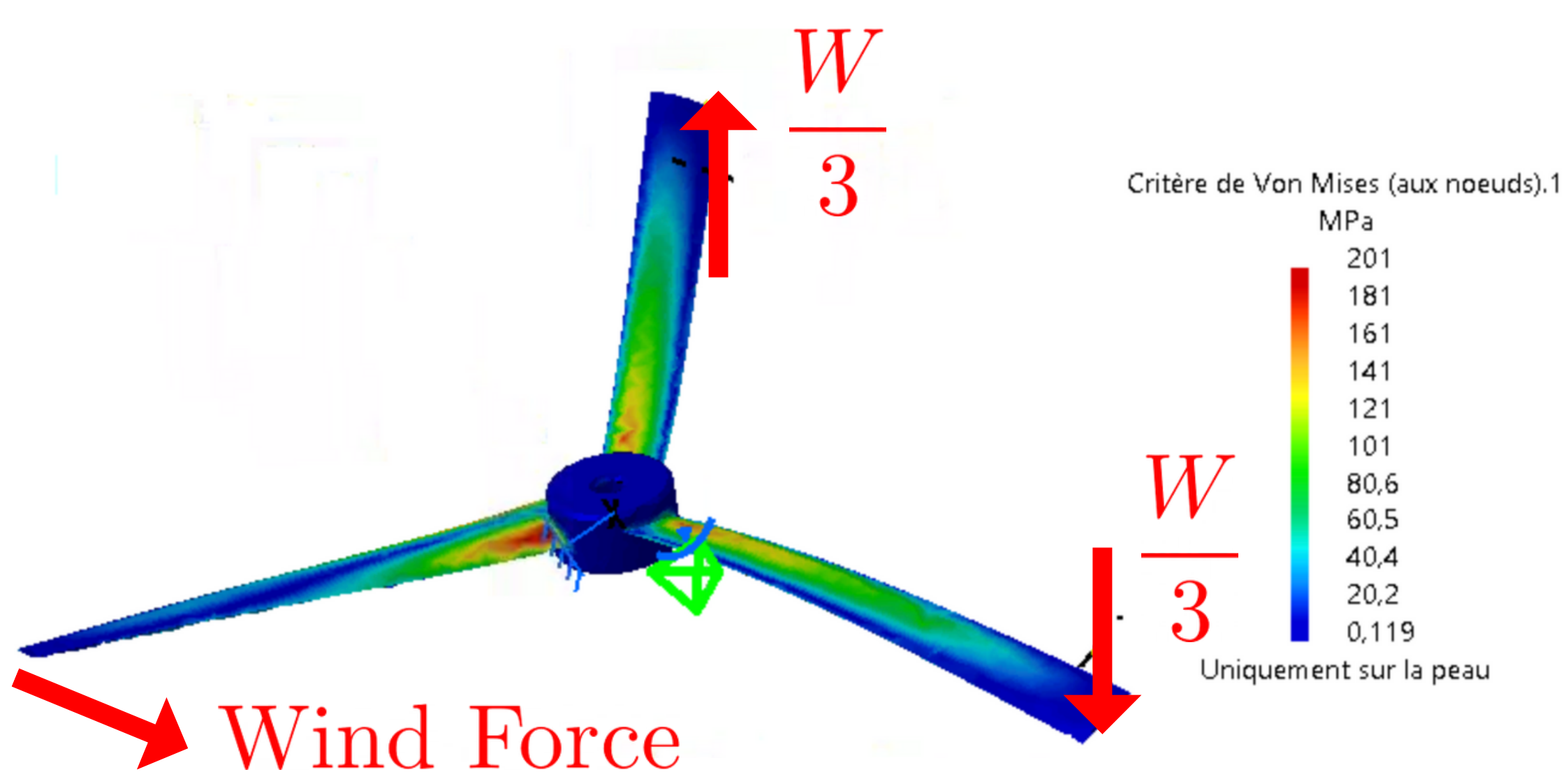


- Wet surface of **0,124 m<sup>2</sup>**.
- Dimensions **27.8 x 27.8 x 7.3 cm**
- Tested structurally with **wind speed up to 14 m/s** and **engine failure**.
- Manufacturing **cost** of **€ 300,00**
- **Carbon fiber** structure manufactured by the molding method.
- Up to **17 020 RPM**



# Racing drone

**When designing the propeller, we had two objectives:**



- **Structural integrity**, which was ensured by a finite element analysis of a critical case, in which we consider a motor failure, so that each motor must lift one third of the weight . A side wind force and a descent of one third of the weight of the drone.
- A **sufficient thrust generated**, to ensure this we considered that the propellers should generate up to 2 times its weight, so that it can accelerate vertically up to 9.81 m/s<sup>2</sup>. With the aerodynamic simulation we ensured this assumption.

- The **structural integrity** of the frame is also ensured by a finite element analysis in a critical case, in which we consider the weight of the drone with only one motor running and the wind force in the opposite arm.

**When designing the frame, it was necessary to ensure good resistance:**

