

BETA-Test-report by Louis Fourdan - 03 June 2019

Little-Sun 2019 is a small RC Solar car designed by Louis Fourdan (retired EE, specialist amateur in brushless motors, author of Scorpion Calc firmware). That prototype was designed in 2017 after a long series of different RC solar cars (started in 1997) to run in several French Solar-RC-challenges (Minexsol, SolaRCup, Defis solaires, Course Solaire ..)

The main goal was to build a Solar RC car with relatively small dimensions (600x300mm).

In 2017 the maker (Louis) used a PV module equipped with 16 half cells (Maxeon SunPower 5”) cut and encapsulated by himself. In 2019 he used modules prepared by Rene Woeran (Black Racing Power, Baumgartenberg Austria) with the same aspect but less heavy.

The prototype weight is 946 grams (including the battery). The PV modules weigh 106 g. So, the complete basic RC car is 740 g. Front steering system uses one INO-Lab servo (21g) acting two wheels with foam tyres 61mm diameter. Only one driving rear wheel, direct drive BLDC (iPower iBM3605Q, 72 g, Kv 620 rpm/V). The main body is made of fiber glass sheet (1mm) and some light carbon tubes (6mm). Radio: Turnigy TS4G

Little Sun was the winner at the “2019 Course solaire Chambéry” in may. The weather was very cloudy in the morning. The organizer decided to authorize a pre-charged battery for a single endurance race (1 hour 30 minutes duration). Louis installed a 2S Panasonic 18650 battery (weight 100 grams). Little Sun ran 2 hours (30 minutes for pilots trainings and 1h30 during the race) with no stops except after some collisions or some rare stops along the track borders.

The brushless speed controller is one mSLR 28-16 tuned to the outrunner.
Principal settings: CW-speed 3320 rpm max, CCW 1400 rpm max, Imot 4 Aac max

Louis is very satisfied by the SLR controller regarding:

- The efficiency
- The ability to start from stop
- The philosophy of the max settings
- The on board datalog
- The low input voltage of only 5V (allowing 2S Lipo)