

S2 Appendix. Solar panel power calculations.

1. Solar panel kit, 28 Watts (model number: L16BR, www.maplin.co.uk).
2. Specifications:

Power:	28 Watts
Peak Output:	1.70A @ 17.6V
Approximate watt-hours per day:	196
Approximate amp-hours per day:	11.9
Dimensions:	559 x 407 x 25mm
Weight:	2.8kg

3. Battery Input = $12\text{ V} \times 1.7\text{ A} = 20.4\text{ Watts}$
for a 12 V battery voltage and 1.7 A peak charge (from the solar panel).
4. The conservative estimated output from solar panel was 6 Watts (instead of 20.4 Watts) based on 10 hours of daylight, sufficient to keep the battery charged to sustain a 2.5 Watts continuous load.