

Batteries for Solar Powered Outdoor Lighting

Application Note



Batteries for Solar Powered Outdoor Lighting

A new focus on rechargeable energy is evident recently as designers look to move from standard light bulbs to high power **LEDs for outdoor applications**. As the light source is no longer the limiting factor on temperature specification, the battery is receiving more attention in this application.

The Battery challenge

The main challenges for this battery are **reliable operation** at the **extended temperature** range from outdoor use, **leakage free consist performance**, **several years of lifetime in daily use**, **low internal resistance**, **charging possibility by solar cells**, and **low service effort**. Generations of Ni-MH batteries used in the automotive environment offer **secure operation** in this surrounding with no stress to the battery due to superior cell **construction**, while the **hermetically sealed** housing design gives high stability even under extreme temperature and humidity conditions.

Technical solution

The V 500 HT cell with a capacity of 500 mAh from the powerful85 family of Ni-MH button cells, is specially designed for continuous use in extended outdoor applications.



Characteristics	6V 500 HT (3V 500 HT)
Voltage level	7.2 V (3.6 V or other voltages possible)
Cont. discharge current	500 mA
Typ. Capacity	500 mAh
Discharge Temperature range	-20°C to +85°C
Overcharge capability	0,45 mA continuous at 20°C for 6 years
Weight	90 g (45g)

VARTA Microbattery's Ni-MH 6V 500 HT and 3V 500 HT batteries (powerful85 family) offer robust, rechargeable battery solutions with reliable power for supplying LED powered standalone outdoor illumination.

7.2 V: PCBD version see [55750 306 012](http://www.varta-microbattery.com/55750306012)

3.6 V: PCBD version see [55750 303 013](http://www.varta-microbattery.com/55750303013) for other versions, please contact VARTA Microbattery or find us at:

<http://www.varta-microbattery.com>

- wide temperature range from -20 to +85°C
- long lifetime
- high reliability – due to special sealing construction
- simple charging system so continuous charging possible
- ROHS compatible
- Halogen and Perchlorate free
- UL recognized cell
- environmentally friendly NiMH technology