



Arkenlight Betalight Voltaic: BLV

A betalight voltaic battery is a type of nuclear battery which generates electrical current from a gaseous tritium light source (GTLS) or betalight vial and a scintillator sandwiched between two photovoltaic cells.

The GTLS gives a steady glow, while the tritium undergoes beta particle decay, and these particles excite the phosphor.

The optical photons from the betalight are collected in a standard photo-voltaic (PV) cell, creating electrical current at the voltage of the PV cell.

A single Betalight battery is designed using two PV cells and 15 GTLS vials. Each GTLS vial has approximately 13.6Gbq activity.

Use Applications:

- Wireless sensor networks (BLE)
- IoT devices
- Structural health monitors
- Remote or hard to reach low power systems

Specification:

Classification: Atomic battery

Dimension: 25mm x 53mm x 5.2mm

Nominal Voltage: 5 V

Nominal Current: 0.7 μ A

Operating Temp: -10° ~ 60°C

Typical Weight: ~50g

Jacket: 2 layers (aluminium shield with shock-resistant rubber external packaging)

Shelf Life: N/A (decays continuously)

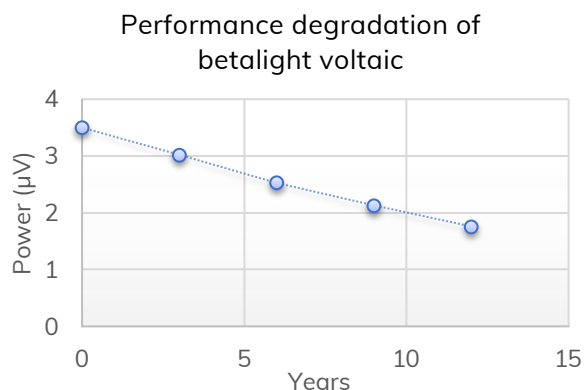
Terminal: wire lead (JST-XHP-2)

Radiation Activity: ~200GBq



Features:

- Multi-decade battery life
- Zero maintenance
- Fit and forget



NB – Above image and data taken from a University of Bristol prototype unit as part of the ASPIRE project.