



# Lithium Iron Phosphate (LiFePO4) vs Sealed Lead Acid (SLA) batteries

The IDwiz Trommel systems are based on Lithium Iron Phosphate (LiFePO4) batteries. These batteries come with a 3-year warranty and are much more reliable than the Sealed Lead Acid (SLA) batteries. They have a built in Battery Management System (BMS) which protects the battery.

Many backup systems using SLA batteries do not protect the batteries and allow them to discharge too much. This results in failure after a short while.

The only drawback is the cost of the LiFePO4 batteries and the charger. When one factors in the lifespan, this cost can be outweighed by not needing to replace the batteries.

Some comparisons:

Specification	LiFePO4 battery	Sealed Lead Acid (SLA) battery
Depth of Discharge (DoD) usable power in battery	80% to 90%	25% to 50% The higher the discharge the shorter the lifespan of battery
Charge-discharge cycles	3000 to 5000 cycles	200 to 1000 cycles If not discharged too much - can be <50 if discharged completely
Ambient temperature	0°C to 45°C	Derated by 10% per 1°C above 25°C
Partial charging	No effect	Battery capacity is permanently diminished
Over charging	Built in battery management system (BMS) for protection	Battery can be damaged
Charger	More expensive LiFePO4 charger	Cheaper SLA charger
Weight, usable power/weight	Much lighter, 83 Wh/kg*	Much heavier, 15 Wh/kg*
Size, usable power/volume	Smaller, 76 Wh/litre*	Larger, 31 Wh/litre*
Lifespan	5-10 years	1-3 years Depends on DoD, charge cycles, temperature, charger and inverter
Warranty on battery	3 years	None
Environment	More environmentally friendly	Less environmentally friendly
Cost, cost/usable power	Double price, R10/Wh*	Half price, R6/Wh*

\*Based on BlueNova BN13V-44-570Wh at 80% DoD and Deltek 12V 105Ah Sealed Lead Acid battery at 30% DoD