# Understanding the GPD110-1212V110Ah GP Battery: Specifications and Applications

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## Core Technical Specifications

This 12V deep-cycle battery delivers 110Ah capacity, translating to 1.32kWh energy storage potential. Using the formula Voltage x Ampere-hour = Watt-hour, its 12Vx110Ah configuration provides 1,320Wh theoretical output. Actual usable capacity typically ranges 70-80% of this value due to discharge limitations.

Key Performance Metrics:

- Full charge requirement: ~6.6kWh (5-hour charge cycle)
- Typical weight range: 27-30kg (lead-acid variant)
- Dimensions estimate: ~330x173x220mm (based on comparable models)

## Operational Characteristics

Designed for deep-cycle applications, this battery supports repeated 80% depth-of-discharge (DoD) cycles. Unlike starter batteries that prioritize short bursts, its thick lead plates enable sustained energy delivery - ideal for:

- Solar energy storage systems
- Marine power solutions
- UPS backup configurations

## Charge Dynamics

Charging follows the CC-CV (Constant Current-Constant Voltage) protocol. At 0.1C rate (11A current), full replenishment requires approximately 10 hours. Advanced charging systems can reduce this to 5-6 hours using multi-stage charging algorithms.

## Maintenance Considerations

While modern AGM versions require minimal upkeep, traditional flooded models need:

- Monthly electrolyte level checks
- Terminal cleaning every 3 months
- Equalization charging quarterly

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Cycle Life Expectations

Proper maintenance yields 500-1,200 cycles depending on discharge depth. At 50% DoD, expect ~1,000 cycles - equivalent to 3-5 years in daily solar applications.

Safety and Compatibility

When integrating with solar inverters or charge controllers, verify:

- Maximum charge current compatibility (>=14.4V absorption voltage)
- Temperature compensation capability (-3mV/?C/cell)
- Low-voltage disconnect threshold (>=10.5V cutoff)

For precise application parameters, consult manufacturer documentation as performance characteristics may vary between AGM, gel, and flooded variants.

Web: https://www.sphoryzont.edu.pl