

WILLIAM

by Ingenium Engineering Solutions
Modular LiFePO₄ Home Battery Storage

10-YEAR LIMITED WARRANTY

Designed & Assembled in New Zealand

10
YEAR WARRANTY

≥8,000
CYCLE LIFE

NZ
MADE & SUPPORTED

LiFePO₄
GRADE A CELLS

1. Warranty Overview

Ingenium Engineering Solutions Limited ("Ingenium") warrants that the William modular LiFePO₄ home battery storage system ("Product") will be free from defects in materials and workmanship under normal use and service conditions for a period of ten (10) years from the date of installation by a certified electrician ("Warranty Period").

This warranty is provided to the original end-user purchaser ("Customer") and is non-transferable unless otherwise agreed in writing by Ingenium.

2. What This Warranty Covers

During the Warranty Period, Ingenium warrants the following:

Coverage Area	Detail
Battery Cells	LiFePO ₄ Grade A cells — defects in materials or manufacturing
Battery Management System	BMS hardware faults and firmware defects
Enclosure & Structure	Aluminium enclosure against manufacturing defects

Terminals & Connectors	M8 terminals and RS485/CAN communication ports
Capacity Retention	≥70% of rated nominal capacity at end of Warranty Period under normal cycling conditions
Modular Components	All Core and Expansion modules supplied as part of the original purchase

3. Warranty Exclusions

This warranty does not cover damage, failure, or degradation caused by or resulting from:

- Installation by non-certified electricians or failure to comply with AS/NZS 5139
- Misuse, abuse, neglect, accident, or unauthorised modification of the Product
- Operation outside of specified voltage, current, temperature, or environmental limits
- Damage caused by external factors including flooding, lightning, fire, or acts of nature
- Use of incompatible inverters, chargers, or electrical equipment
- Normal wear and tear, cosmetic damage, or surface corrosion not affecting performance
- Failure to follow Ingenium's installation, commissioning, or maintenance guidelines
- Removal or tampering with safety labels, serial numbers, or BMS seals
- Freight or transit damage after delivery to the Customer's premises

4. Warranty Claim Procedure

To make a warranty claim, the Customer must:

- Contact Ingenium Engineering Solutions via email at william@ingenium.nz or through www.ingenium.nz within the Warranty Period
- Provide proof of purchase (invoice or receipt), installation date, and name of the installing electrician
- Provide a detailed description of the fault, including any error codes, BMS logs, or photographs
- Allow Ingenium reasonable access to inspect the Product, either remotely (via RS485/CAN diagnostics) or on-site

Ingenium will acknowledge warranty claims within five (5) business days and provide an assessment outcome within fifteen (15) business days of receiving all required information.

5. Remedy

At Ingenium's sole discretion, a valid warranty claim will be remedied by one of the following:

- Repair of the defective component or module
- Replacement of the defective component or module with an equivalent or better unit
- Replacement of the entire Product where individual repair or component replacement is not feasible

Ingenium will cover reasonable labour and parts costs for warranty repairs performed by Ingenium-
authorised technicians. The Customer is responsible for reasonable costs of access where special
equipment or conditions are required.

6. Product Specifications

This warranty applies to all William configurations as specified in the Product Datasheet:

Configuration	Core	Core+1	Core+2	Core+3	Core+4
Nominal Voltage	51.2V	51.2V	51.2V	51.2V	51.2V
Energy (kWh)	16.07	32.14	48.21	64.28	80.35
Cycle Life	≥8,000	≥8,000	≥8,000	≥8,000	≥8,000
Warranty	10 Years	10 Years	10 Years	10 Years	10 Years

7. Standards & Certifications

- Installed to AS/NZS 5139 by certified electricians
- Cells certified to IEC62619:2022 — Safety for stationary lithium-ion batteries
- Transport certified to UN38.3 — Lithium battery transport testing
- Designed and assembled in New Zealand

8. Consumer Guarantees Act 1993 (New Zealand)

Nothing in this warranty limits or excludes the rights of any Customer under the Consumer
Guarantees Act 1993 (NZ) or any other applicable New Zealand legislation. If you are a Consumer
under that Act, you have statutory rights that cannot be excluded or limited by this warranty. This
warranty is in addition to, and does not affect, your statutory rights.

9. Limitation of Liability

To the maximum extent permitted by law, Ingenium's liability under this warranty is limited to the remedies described in Section 5. Ingenium shall not be liable for any indirect, incidental, consequential, or special loss or damage arising from or in connection with the Product, including but not limited to loss of revenue, data, or savings.

10. Warranty Registration & Contact

To register your warranty or make a claim, please contact:

Ingenium Engineering Solutions Limited

Designed & Assembled in New Zealand

Website: www.ingenium.nz

Email: william@ingenium.nz

This document constitutes the full warranty terms for the William home battery storage system.

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EECA Solar Products Approved List — Battery Compliance

William meets all battery requirements of the EECA Solar Product Technical Specification (Version 2, December 2025) for inclusion on the EECA Approved Solar Products List. William uses Westart Grade A LiFePO₄ cells (model WS-SSC314AH-3.2V), independently safety-certified to IEC 62619:2022 by SGS (CB Report No. SHES250100148501, February 2025). William is a standalone battery module with no integrated inverter, classified as an **Efficiency Battery** under the specification.

Area	EECA Requirement	William Compliance	Evidence
Efficiency battery (standalone module, no inverter)	Round-trip efficiency $\geq 85\%$. Equivalent method to IEC 62933-2-1: 2017.	Round-trip efficiency 94.7-97.1% at 0.5P (157A charge/discharge, 25 degrees C). All three cells tested exceed 94.6% at the standard 0.5P rate, and exceed 96.7% at 0.33C — well above the 85% minimum.	Westart Energy Efficiency test data (page 5 of cell introduction document). Methodology equivalent to IEC 62933-2-1: 2017.
Degradation	At least 60% of new usable capacity after 3,000 cycles with at least 70% depth of discharge (e.g. 20-90% or 30-100%).	Cell testing at 25 degrees C (0.5P/0.5P, 2.5-3.65V, 100% DoD) shows $>80\%$ capacity retention at 8,000 cycles — more than double the required 3,000 cycle threshold, and retaining $>90\%$ at 3,000 cycles. Warranty guarantees $\geq 70\%$ rated capacity over 10-year period.	Westart cycle life test data (page 7 of cell introduction document). Product warranty (Section 2, Capacity Retention and Degradation Performance).
Measurement	- State of charge - Current maximum usable capacity - Battery set mode (e.g. self-consume, peak-shaving)	BMS monitors and reports via RS485/CAN: - State of charge (%) - Current max usable capacity (Ah and kWh) - Active battery set mode	Product documentation (this datasheet, BMS Features section)
Product response	Ability to set: - Minimum state of charge - Maximum state of charge - Operating mode	BMS supports configuration of: - Minimum SoC - Maximum SoC - Operating mode (self-consume, peak-shaving, backup, custom)	Product documentation (this datasheet, BMS Features section)

* Depth of discharge based on Westart cycle life test at 2.5-3.65V (100% DoD). EECA requires $\geq 70\%$ DoD; William's cells are tested at 100% DoD, a more demanding condition. ** SGS IEC 62619:2022 CB test report covers: external short-circuit, impact, drop, thermal abuse, overcharge, forced discharge, and internal short-circuit tests — all passed with no fire or explosion.

Cell Energy Efficiency Test Data — Westart WS-SSC314AH-3.2V

Round-trip energy efficiency measured at cell level across three cells at multiple charge/discharge rates at 25 degrees C. The highlighted row (0.5P) corresponds to the IEC 62933-2-1:2017 standard test rate and is the primary reference for EECA compliance:

Test Rate	Cell 1	Cell 2	Cell 3	Average
0.25P (62.5A)	97.08%	96.98%	96.78%	96.95%
0.33C	96.76%	96.78%	97.79%	97.11%
0.5P (157A)	94.69%	94.70%	94.71%	94.70%
0.5C	95.51%	95.61%	96.50%	95.87%
1P (314A)	91.91%	91.96%	92.33%	92.07%
1C	92.79%	93.01%	93.87%	93.22%

Source: Westart Energy Efficiency test data. All values are round-trip (charge energy in / discharge energy out). EECA minimum requirement: $\geq 85\%$. William cells achieve 94.7% at the 0.5P reference rate, exceeding the requirement by approximately 10 percentage points.

BMS Measurement & Control Features

William's Battery Management System (BMS) provides the measurement and controllability required by the EECA specification:

State of Charge (SoC)	Real-time SoC reading via BMS display and RS485/CAN comms
Current Max Usable Capacity	BMS tracks and reports actual usable capacity in Ah and kWh
Battery Set Mode	Self-consume, peak-shaving, backup priority — selectable via BMS or inverter
Minimum SoC Setting	Configurable by installer/owner to protect cell longevity
Maximum SoC Setting	Configurable by installer/owner to optimise for solar charging or grid use
Operating Mode Control	Mode selection via BMS interface or compatible inverter integration