

WILLIAM

by Ingenium Engineering Solutions
Modular LiFePO₄ Home Battery Storage

PRODUCT DATASHEET

Designed & Assembled in New Zealand | IEC62619:2022 | UN38.3 Certified

16–80 kWh CAPACITY	51.2V NOMINAL VOLTAGE	≥8,000 CYCLE LIFE	10 YR WARRANTY
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Overview

William is a modular LiFePO₄ home battery storage system designed and assembled in New Zealand by Ingenium Engineering Solutions. Drawing on a track record in advanced industrial battery systems — including contributions to a patented industrial battery design — Ingenium has engineered William specifically for New Zealand homes: safe, scalable, and built for decades of reliable service.

Start with the Core unit (16.07 kWh) and expand with up to four Expansion modules for a total of 80.35 kWh. William charges on solar or off-peak grid tariffs, smooths peak demand charges, and keeps your home powered through outages.

Key Features

Safe Chemistry LiFePO ₄ Grade A cells with intelligent BMS protection — thermally stable and designed for everyday peace of mind.	Modular Capacity Start with the Core (~16 kWh) and add up to four Expansion modules for up to 80.35 kWh of total storage.
Built for NZ Compact, quiet aluminium enclosure designed for local homes, sheds, and New Zealand environmental conditions.	Grid Resilience Charge on solar or off-peak tariffs, smooth peak demand charges, and power through grid outages.

Long Service Life ≥8,000 cycles with a 10-year warranty — engineered for decades of reliable service.	Installer-Friendly Clean mechanical design, clear documentation, M8 terminals, RS485/CAN comms, and responsive local support.
Standards-Aligned Installed by certified electricians to AS/NZS 5139. Cells certified to IEC62619:2022 and UN38.3.	Local Support Designed, assembled, and supported in New Zealand — by engineers you can actually call.

Technical Specifications

Parameter	Core	Core + 1	Core + 2	Core + 3	Core + 4
Nominal Voltage	51.2V	51.2V	51.2V	51.2V	51.2V
Nominal Capacity	314 Ah	628 Ah	942 Ah	1,256 Ah	1,570 Ah
Battery Energy	16.07 kWh	32.14 kWh	48.21 kWh	64.28 kWh	80.35 kWh
Max Charge Current	150 A	250 A	250 A	250 A	250 A
Max Discharge Current	150 A	250 A	250 A	250 A	250 A
Recommended Load	5–7 kW	5–13 kW*	5–13 kW*	5–13 kW*	5–13 kW*
Charge Cut-Off Voltage	57.6V ±0.2V	57.6V ±0.2V	57.6V ±0.2V	57.6V ±0.2V	57.6V ±0.2V
Discharge Cut-Off Voltage	44.8V ±0.2V	44.8V ±0.2V	44.8V ±0.2V	44.8V ±0.2V	44.8V ±0.2V
Cell Type	LiFePO ₄ Grade A	LiFePO ₄ Grade A	LiFePO ₄ Grade A	LiFePO ₄ Grade A	LiFePO ₄ Grade A
Case Material	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
Colour	Dark Teal	Dark Teal	Dark Teal	Dark Teal	Dark Teal
Terminal	M8	M8	M8	M8	M8
Communication	RS485 / CAN	RS485 / CAN	RS485 / CAN	RS485 / CAN	RS485 / CAN
Cycle Life	≥8,000	≥8,000	≥8,000	≥8,000	≥8,000
Warranty	10 Years	10 Years	10 Years	10 Years	10 Years
Weight	112 kg	220 kg	330 kg	440 kg	550 kg
Dimensions (L×W×H)	670×480×330 mm	670×480×570 mm	670×480×810 mm	670×480×1,060 mm	670×480×1,320 mm

** Recommended load depends on inverter configuration and number of modules connected.*

Assembly & Certifications

Attribute	Detail
Assembly Method	Stackable & Moveable — modules stack vertically with no permanent fixings required
Installation Standard	Installed by certified electricians to AS/NZS 5139
Cell Certification	IEC62619:2022 — Safety for stationary lithium-ion batteries
Transport Certification	UN38.3 — Lithium battery transport testing
Origin	Designed & Assembled in New Zealand

Why William

“William is designed by the same engineers who have proven battery technology in demanding industrial applications — then refined specifically for homes. Safer chemistry, smarter control, and local support you can actually call. William turns your solar into dependable, year-round energy and keeps the lights on when the grid doesn’t.”

Ingenium Engineering Solutions

Contact & Further Information

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Specifications subject to change without notice. For the latest information visit www.ingenium.nz

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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