

279kWh DC Battery Cabinet



279kWh

ENERGY
CAPACITY

125kW

GUARANTEED
MIN POWER

634-994^V

DC VOLTAGE
RANGE

6K+

CYCLE LIFE
@ 80% DOD

-40/+55^{°C}

OPERATING
TEMP

IP54

ENCLOSURE
RATING

20^{yr}

DESIGN
LIFE

Smart

ENERGIOS™
ENABLED

ENERGY STORAGE YOU CAN BANK ON

www.CoulombTechnology.com · sales@coulombtechnology.com · 208-768-8888

279kWh DC Battery Cabinet

- Sodium-Ion NFPP
- Air-Cooled
- 2.2–10 Hour Duration



Built for critical infrastructure resiliency and demanding use cases, the Series DC 279kWh Battery Cabinet prioritizes compliance, field-validated performance, and bankable warranties — delivering a **14% lifetime TCoO improvement** over liquid-cooled lithium-ion systems.

Includes an outdoor, IP54-rated enclosure containing:

- Sodium-Ion NFPP battery modules
- Air-cooled thermal management
- Fire suppression & gas detection
- Battery Management System (BMS)
- Auxiliary safety systems
- Explosion venting system

KEY BENEFITS



Safety-First Design

Sodium-ion chemistry eliminates thermal runaway risk from the chemistry up — enabling safer siting and simpler AHJ approvals.

- ✓ Lower lifetime O&M costs
- ✓ Air-shippable — faster deployment
- ✓ Reduced thermal propagation risk
- ✓ Clearer AHJ approvals



Extreme Performance

Operates where traditional batteries fail — from arctic cold to desert heat — without derating or HVAC infrastructure.

- ✓ -40°C to +55°C operation
- ✓ 20-year projected battery life
- ✓ No HVAC required
- ✓ Fast charging capability



Supply Chain Resilience

Real-world validation, not laboratory promises. Clear domestic manufacturing pathway with no tariff exposure.

- ✓ DOD / Federal compliance path
- ✓ No tariff exposure
- ✓ Domestic manufacturing pathway
- ✓ Supply chain diversification

WHERE THE SERIES DC PERFORMS



MANUFACTURING / COLD STORAGE / DISTRIBUTION

Peak Demand Management

Reduce demand charges by 30–50% at manufacturing facilities, cold storage warehouses, distribution centers, and agriculture operations while maintaining full capacity in extreme temperatures.



DATA CENTERS / HEALTHCARE / TELECOM

Critical Infrastructure Backup

Guaranteed uptime for data centers, hospitals, emergency services, and telecommunications — with air-cooled simplicity and no fire suppression complexity.



WAREHOUSE / PORT / AIRPORT

Material Handling & Fleet

Fast charging and extreme temp tolerance for 24/7 operations — warehouse automation, port equipment, and airport ground support.



SOLAR / WIND / CAMPUS / COMMUNITY

Renewable Energy Integration

Long-duration storage with 20-year design life for bankable projects — solar + storage microgrids, wind energy smoothing, campus energy systems, and community solar projects.

SERIES DC — CABINET



279kWh

Energy Capacity

140kW

125 kW guaranteed constant

634-994V

DC Voltage Range

2.2-10hr

Peak shaving to long backup

-40/+55°C

No HVAC — any climate

ENCLOSURE RATING

IP54

Outdoor-rated direct install

PARAMETER	VALUE / DESCRIPTION	UNIT
ENERGY CAPACITY	279	kWh
USABLE ENERGY (85% DOD)	229	kWh
MAX RATED POWER	140	kW
GUARANTEED CONSTANT POWER	125	kW
DC VOLTAGE RANGE	634 – 994	VDC
DURATION	2.2 – 10	Hours
CELL TYPE	Sodium-Ion NFPP (Non-Flammable Polymer Pouch)	—
OPERATING TEMP (DISCHARGE)	-40°C to +55°C	—
DIMENSIONS (L x W x H)	2.0 x 1.5 x 2.3	Meters
ENCLOSURE (IP RATING)	Outdoor Cabinet — IP54	—
THERMAL MANAGEMENT	Air-Cooled (No HVAC Required)	—
BMS COMMUNICATION	US BMS, Modbus TCP	—
AUXILIARY SYSTEMS	Fire Suppression, Gas Detection, Venting	—

CERTIFICATIONS

UL 1973

UL 9540

UN 38.3

Cell & Module Level

UL 9540A TESTING

Cell: Tested & Passed

Module/System: In Progress

WARRANTY

Cell: 3 Years

System: 5 Years

Extended warranty available

FACTORY ACCEPTANCE TEST (FAT) SCOPE

✓ Visual, Mechanical & Torque Inspection

✓ 3 x 0.125C Capacity/Energy Verification (85% DOD)

✓ Protections & Isolation Tests

✓ Baseline OCV Measurement

✓ Functional & Conditioning Test

✓ 10 x 0.5C Stability Cycles with Power Checks

WHY SODIUM-ION NFPP OUTPERFORMS LEGACY LEAD-ACID TECHNOLOGY

A Clear Advantage Across Every Performance Dimension

Coulomb Technology's Sodium-Ion NFPP chemistry delivers superior cycle life, wider operating temperature range, zero maintenance, and a fundamentally safer chemistry — making it the ideal replacement for lead-acid in critical commercial and industrial applications.

FEATURE	SODIUM-ION NFPP	LEAD-ACID
Cycle Life	3,000+ cycles @ 80% DoD	300–500 cycles @ 50% DoD
Weight (100Ah)	13 kg (28.7 lb)	~22 kg (48.5 lb)
Usable Capacity	80–100% DoD	50% DoD (to preserve life)
Discharge Temp Range	–40°C to +60°C	–20°C to +50°C
Charge Temp Range	–10°C to +45°C	0°C to +40°C
Maintenance	Zero maintenance	Regular watering & equalization
Self-Discharge	<3% per month	5–15% per month
Charging Efficiency	~95%	~75%
Thermal Runaway Risk	Zero risk	Low risk
Toxic Gas Emissions	None	Hydrogen gas during charging
Memory Effect	None	Sulfation if undercharged
Lifespan	10+ years	3–5 years
Environmental Impact	Non-toxic, recyclable	Lead & acid hazardous

30%

Safer chemistry
vs. LFP lithium-ion

50%

More extreme temp
tolerant vs. LFP

20%

Less degradation
vs. LFP lithium-ion

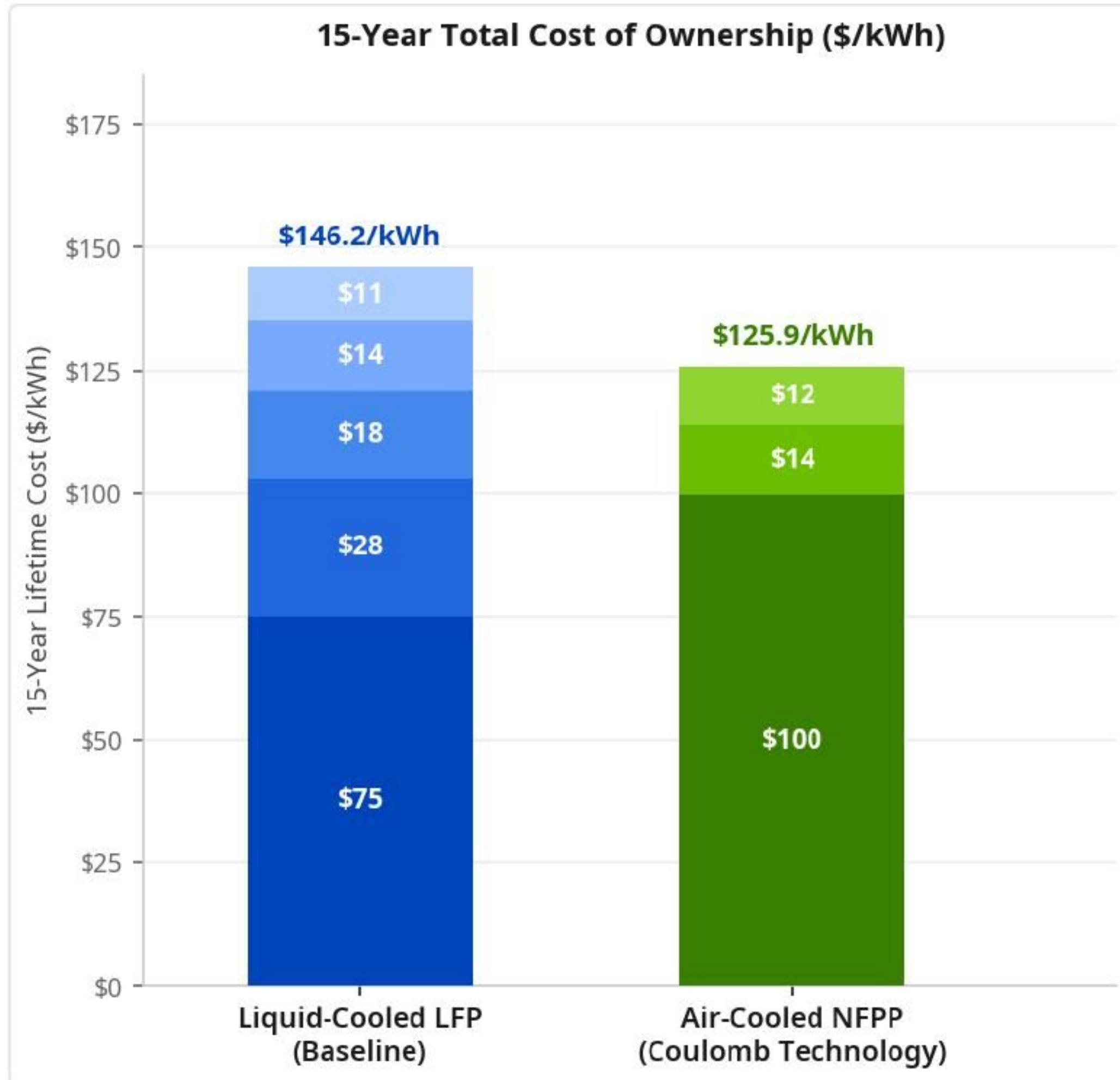
Zero

Thermal runaway
risk

SYSTEM ADVANTAGE OVER LFP-BASED SYSTEMS

14% Lower Total Cost of Ownership Over the Project Lifetime

Our sodium-ion technology delivers measurable savings through eliminated HVAC requirements, reduced degradation, and lower maintenance, insurance, and permitting costs — validated by real-world deployments, not laboratory projections.



MODEL ASSUMPTIONS

NFPP installed price delta	\$16/kWh
Cycles per year	365
HVAC load delta	90%
Insurance cost delta	20%
Augmentation delta	20%
O&M cost delta	30%
Cell derating / cold temps	75%
Discount rate / NPV calc	8%

COST COMPONENTS

- LFP — CapEx
- NFPP — CapEx
- LFP — HVAC Load
- NFPP — O&M
- LFP — O&M
- NFPP — Insurance
- LFP — Insurance
- LFP — Augmentation

14% TCoO Savings — Air-cooled NFPP (\$125.9/kWh) vs. Liquid-cooled LFP (\$146.2/kWh) over a 15-year project lifetime.

\$20.3/kWh — Lifetime savings per kWh over project lifetime

20yr — Projected battery life, sodium-ion NFPP chemistry

RESEARCH & DEVELOPMENT PARTNERS

