

# COREVA S

## TECHNICAL BROCHURE



freedom  
WON

## Introducing the COREVA 5

### Project-Ready Utility-Scale Energy Storage

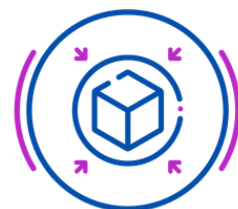
The COREVA 5 is a fully integrated 5MWh lithium iron phosphate (LiFePO<sub>4</sub>) battery energy storage system engineered for commercial, industrial and utility-scale applications.

Housed within a 6m container, the system combines high energy density, advanced thermal management, integrated safety systems and scalable architecture to support grid services, renewable integration, peak demand management and energy shifting applications.



# Key Features

The system is designed to simplify deployment while maintaining high levels of operational reliability and safety.



## Compact Footprint

High energy density



## Triple-layer Protection

Cell, module and system level monitoring for enhanced protection and control



## Liquid Thermal Management

Integrated liquid heating and cooling



## Seamless scalability

Expandable for larger project requirements

## The COREVA 5 integrates:

- High-density LiFePO<sub>4</sub> battery modules
- Integrated liquid cooling
- Multi-layer fire detection and suppression
- Battery management system (BMS)
- Energy management system (EMS)
- Site-ready container architecture

| Parameter                      | Value         |
|--------------------------------|---------------|
| Total Storage Capacity [kWh]   | 5.015         |
| Nominal Voltage [V]            | 1331.2        |
| Max/Min. Operating Voltage [V] | 1497.6/1164.8 |
| Max. Charge/Discharge Rate     | 0.5C @ 25°C   |
| Max. Charging Power [kW]       | 2507.9 (0.5C) |

## Engineering Advantages

### High Energy Density

The COREVA 5 delivers over 5MWh of storage within a standard 6m container footprint, allowing project developers to maximise energy capacity while reducing land utilisation and civil works requirements.

### Benefits

- Reduced site footprint
- Lower balance-of-plant costs
- Increased energy density per square metre
- Simplified site layouts

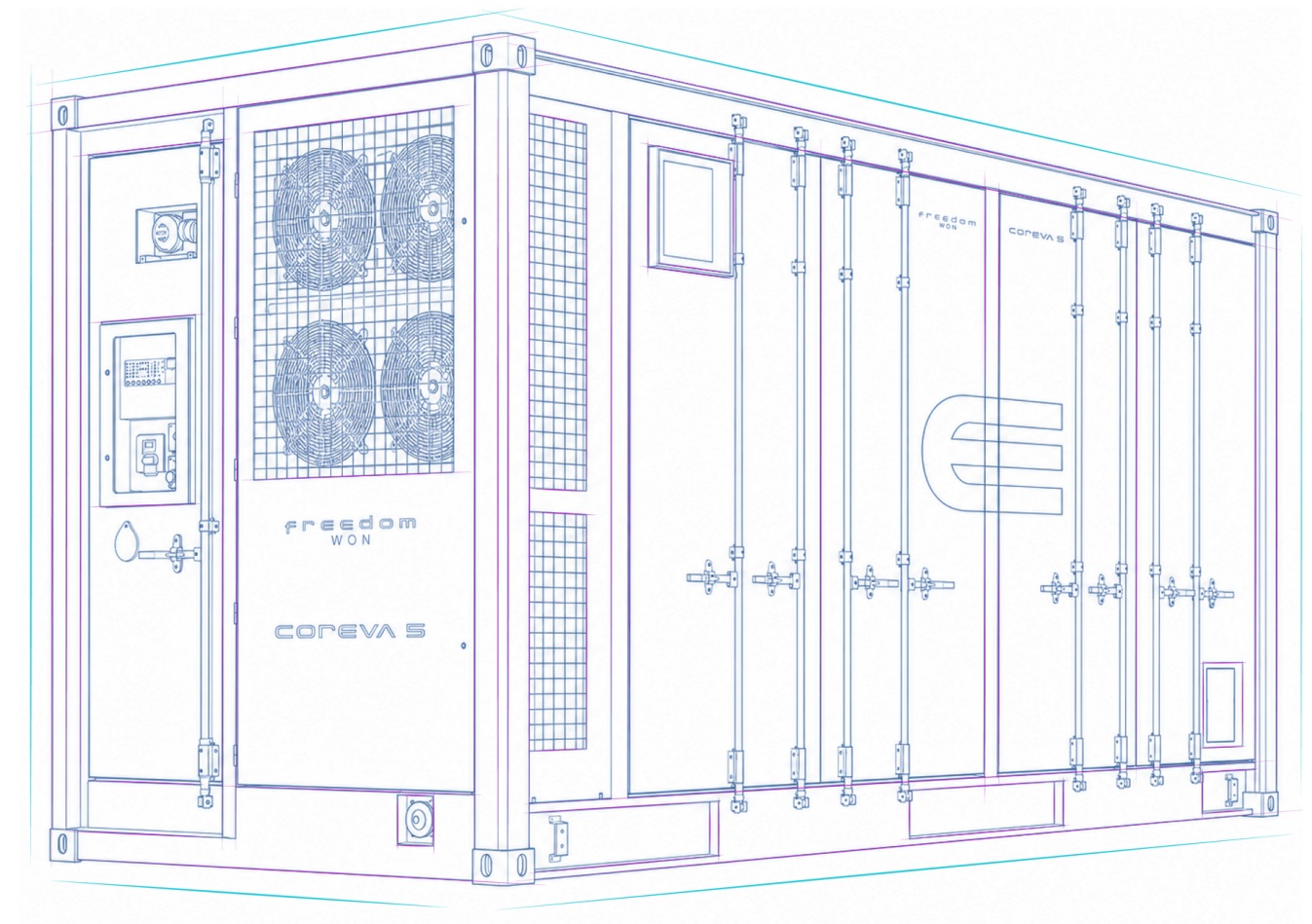
### Intelligent Thermal Management

#### Integrated Liquid Cooling

The liquid cooling system uses optimised flow distribution and intelligent thermal control to maintain consistent cell temperatures across the battery system. This minimises temperature gradients and supports long-term cell performance.

## Engineering Benefits

- Improved thermal stability
- Reduced cell degradation
- Increased system efficiency
- Extended operational lifespan
- Consistent performance across varying ambient conditions



## Safety Architecture

### Multi-Layer Protection Strategy

Safety is incorporated at multiple levels through continuous monitoring, early event detection and automated suppression systems.

#### Detection Systems

- Temperature monitoring
- Smoke detection
- Off-gas detection

#### Suppression Systems

##### Aerosol Fire Suppression

Integrated aerosol suppression provides additional protection within the container environment.

##### Water Sprinkler System

Suppresses prolonged thermal events and assists first responders.

##### Thermal Event Management

Cell-level monitoring and thermal isolation strategies assist in detecting, managing and containing thermal events at source.

## Control and Integration

### Flexible Communication

The COREVA 5 supports integration with utility, industrial and microgrid control systems through:

- CAN
- RS485
- Ethernet

### Supported Protocols

- Modbus TCP/IP
- Modbus RTU
- CAN
- IEC104

### EMS Integration

System operation is coordinated through the Freedom Won Energy Management System (EMS), enabling advanced control, monitoring and optimisation strategies.

## Compliance and Certification

### International Standards

- IEC 62619
- IEC 62477-1
- IEC 61000-6-2
- IEC 61000-6-4
- IEC 63056



### Transport Compliance

- UN38.3
- UN3536

Backed by a 5-year warranty. Engineered to outlast it.

Standard Warranty:  
5 years (Warranty extension available)

## Specifications

| ELECTRICAL SPECIFICATIONS      |                                                                                       |
|--------------------------------|---------------------------------------------------------------------------------------|
| Cell Capacity [Ah]             | 314                                                                                   |
| Battery Chemistry              | Lithium Iron Phosphate (LiFePO4)                                                      |
| Total Storage Capacity [kWh]   | 5015                                                                                  |
| Nominal Voltage [V]            | 1331.2                                                                                |
| Max/Min. Operating Voltage [V] | 1497.6/1164.8                                                                         |
| Max. Charge/Discharge Rate     | 0.5C @ 25°C                                                                           |
| Max. Charging Power [kW]       | 2507.9 (0.5C)                                                                         |
| ENVIRONMENTAL PARAMETERS       |                                                                                       |
| Storage Temperature [°C]       | -20°C to 25°C (long term - max. 6 months); -20°C to 40°C (short term - max. 3 months) |
| Operating Temperature [°C]     | -30°C to 55°C                                                                         |
| Operating Humidity [%]         | ≤95                                                                                   |
| Altitude [m]                   | ≤3000                                                                                 |
| Ingress Protection             | IP55                                                                                  |
| Cooling Method                 | Integrated liquid cooling and heating                                                 |
| COMMUNICATION                  |                                                                                       |
| Communication Method           | CAN, RS485, Ethernet                                                                  |
| Communication Protocol         | CAN, Modbus-TCP/IP, Modbus RTU, IEC104                                                |
| Integration and Control        | Top-level control by Freedom Won EMS                                                  |
| FIRE PROTECTION                |                                                                                       |
| Detection                      | Temperature, Smoke, Off-gas                                                           |
| Pack Level Suppression         | Aerosol + water misting system                                                        |
| CONTAINER SPECIFICATIONS       |                                                                                       |
| Dimensions (HxWxD) [mm]        | 2896x6058x2438 (dimensions as per 6m shipping container)                              |
| Weight [Tons]                  | 41.8                                                                                  |
| ADDITIONAL INFORMATION         |                                                                                       |
| Standard Warranty              | 5 years                                                                               |
| Extended Warranty              | 10 years                                                                              |
| Service Level Agreement        | Available for maintenance plans up to 20 years                                        |

# Let's Connect

We're here to power your energy future.



**Phone**

+27 (0) 10 597 7794



**E-mail**

enquiries@freedomwon.co.za



**Website**

www.freedomwon.co.za

**Follow us on**

