



## Sunwoda Liquid Cooling Battery Container System



### Introduction

Sunwoda LBCS (liquid -cooling Battery Container System) is a feature-proof industrial battery system with liquid cooling shipped in a 20-foot container. The standard unit is prefabricated with modular battery cluster, fire suppression system, water chilling unit and local monitoring. LBCS is a ready-to-connect solution for energy storage application such as peak shifting and frequency regulation. Sunwoda battery cluster modular unit consists of standard rack-based battery module (battery pack) and a comprehensive multi-level battery management system (BMS). The team behind LBCS is ready to help you with professional integration support with new or existing solar power, wind power, thermal power and more.

### Features

- Higher energy density, 20 ft container energy over 3.44MWh
- Innovative liquid cooling technology , battery life extended more than 20%
- Support local / remote monitoring and maintenance through mobile clients(APP)
- The total weight of standard 20 ft container is no more than 30,000 kg for smooth shipping
- Extreme safety, five level safety design, dual fire protection, with combustible gas emission and explosion venting design
- Supports plug and play combination of two containers, which is flexible suitable for the application of large energy storage power stations.
- Rack level control solution solves the problem of loop current between racks, improves the availability of batteries by 7%, and supports the mixing of old and new batteries and phased deployment, and reduces LCOS by 10% during its lifetime.



## Technical parameters

### PowerE-1500/2752

### PowerE-1500/3440

#### Cell

Chemistry	LFP	LFP
Specifications	3.2V/280Ah	3.2V/280Ah
Rated C-rate	0.5Cp	0.5Cp
Max C-rate	1Cp	1Cp
Cycle Life	8000 cycles @25 °C,0.5Cp/0.5Cp	8000 cycles @25 °C ,0.5Cp/0.5Cp
Calendar Life	20 years	20 years

#### Battery Pack

Combination	1P48S	1P48S
Rated Capacity	280Ah	280Ah
Rated Voltage	153.6V	153.6V
Operating Voltage	134.4 ~ 172.8V	134.4 ~ 172.8V
Rated Energy	43kWh	43kWh
Rated C-rate	0.5Cp	0.5Cp
Max C-rate	1Cp	1Cp
Temperature Difference	≤2 °C	≤2 °C

#### Battery Rack

Rated voltage	1228.8V	1228.8V
Operating Voltage	1075.2 ~ 1382.4V	1075.2 ~ 1382.4V
Rated Energy	344kWh	344kWh
Rated C-rate	0.5Cp	0.5Cp
Max C-rate	1Cp	1Cp

#### Battery Container System

Rated Energy	2752kWh	3440kWh
DC Round Trip Efficiency(0.5Cp)	> 93%	> 93%
Rated Voltage	1228.8V	1228.8V
Operating Voltage	1075.2 ~ 1382.4V	1075.2 ~ 1382.4V
Rated C-rate	0.5Cp	0.5Cp
Max. C-rate	1Cp	1Cp
Operating Temperature	-30 °C ~ 55 °C	-30 °C ~ 55 °C
Storage Temperature	-40 °C ~ 60 °C	-40 °C ~ 60 °C
Relative Humidity	0 ~ 95%	0 ~ 95%
Altitude	≤ 3000m (Derating over 3000m)	≤ 3000m (Derating over 3000m)
Cooling Mode	Liquid cooling	Liquid cooling
Fire Suppression	Pack level fire protection (FM200/ Novec 1230) + water fire protection + combustible gas detection+ Exhaust ventilation + Deflagration venting	
Auxiliary Power Input	3-phase 400VAC/50Hz, 480VAC/60Hz	
Battery Management System(BMS)	3 levels +Passive balance 200mA (Active balance 2A optional)	
Communication Interface	CAN/RS485/Ethernet	
Communication Protocol	Modbus-RTU / Modbus-TCP/IEC 61850	
Codes & Compliance	NFPA68/69,NFPA855,GB36276,IEC62619,IEC62933,UL1973,UN38.3 , UN3536,UL9540A	
IP Rating	IP55/NEMA 3R	IP55/NEMA 3R
Dimensions (W*D*H,mm)	6058*2438*2591 (20ft×8ft×8.5ft)	6058*2438*2896 (20ft×8ft×9.5ft)
Weight	29,000kg	33,000kg