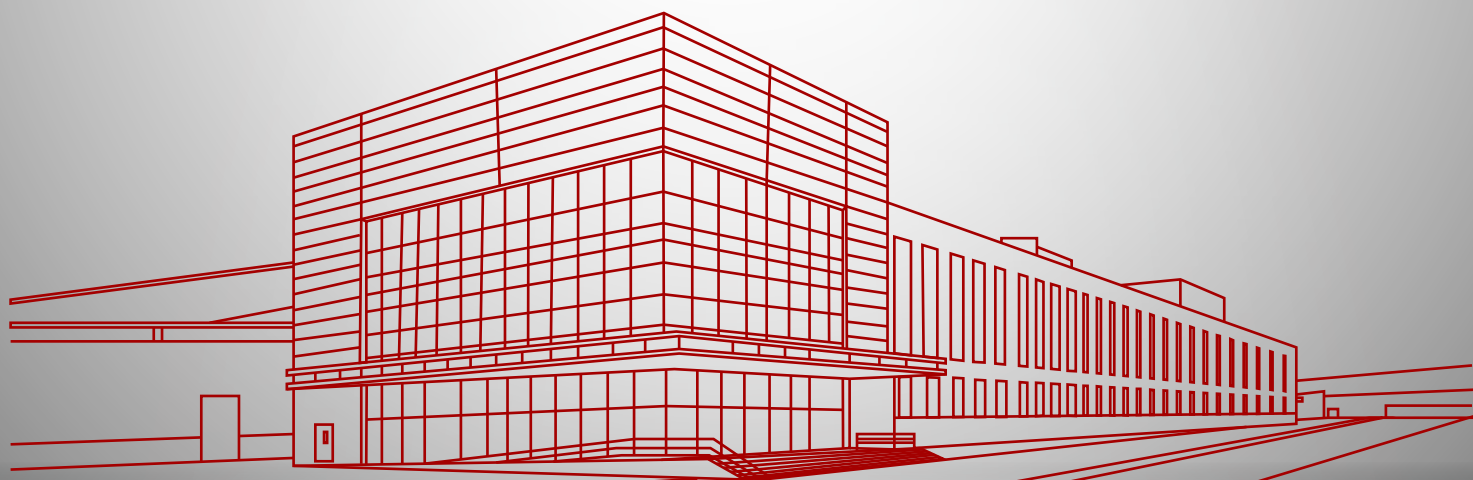




Matrix

Maximum Safety for Your Energy



C&I / Utility BESS Introduction



High Level Integration

Lithium iron phosphate battery (LFP) integrates with BMS, PDU, FFS, cooling unit, etc.

Integrated battery rack provides a convenient system for indoor and outdoor applications

Advanced integration ensures optimal system performance and lower costs



Efficient and Flexible

Modular design supports convenient installation, parallel connections and easy system expansions

Intelligent battery management system and cell-level temperature control ensures a high-level safety, efficiency, and a longer-lasting battery life cycle

Activates a vast number of business models. For instance, self-consumption, manage consumption peaks, backup or provide energy in other special use cases.



Safe and Reliable

Multi-state monitoring and actions ensure battery safety

DC electric circuit safety management includes fast breaking and anti-arc protection

A three-level management system design delivers high reliability

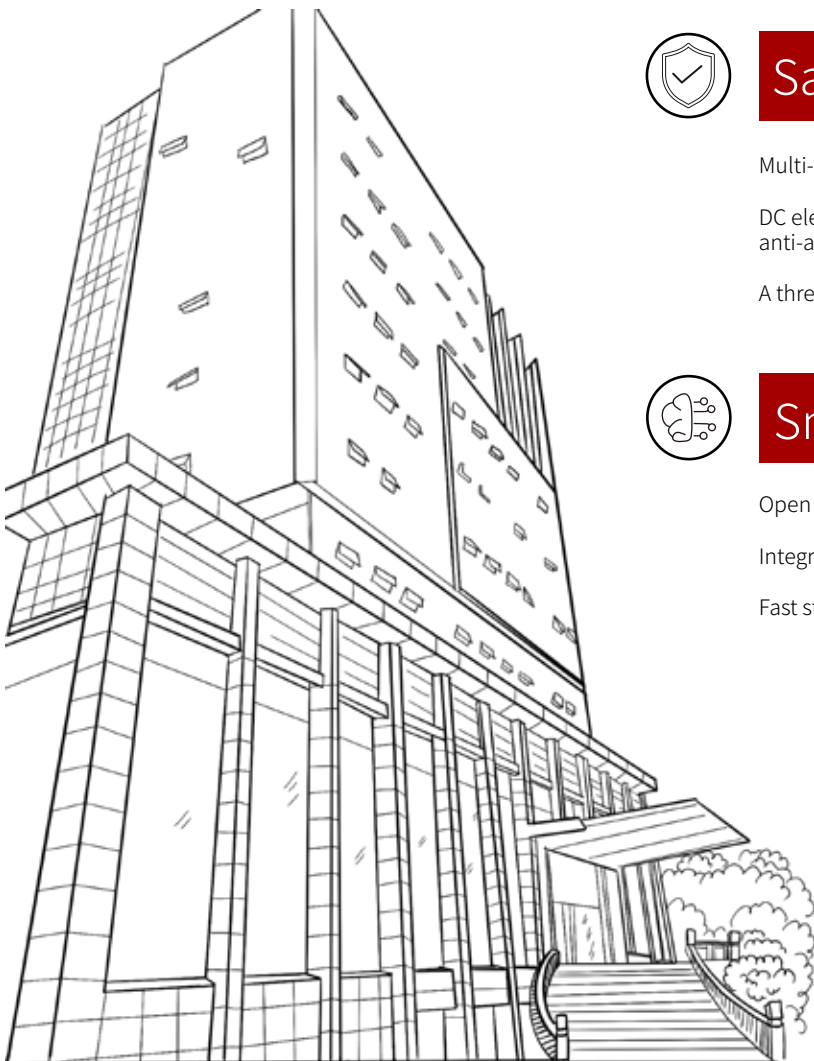


Smart and Friendly

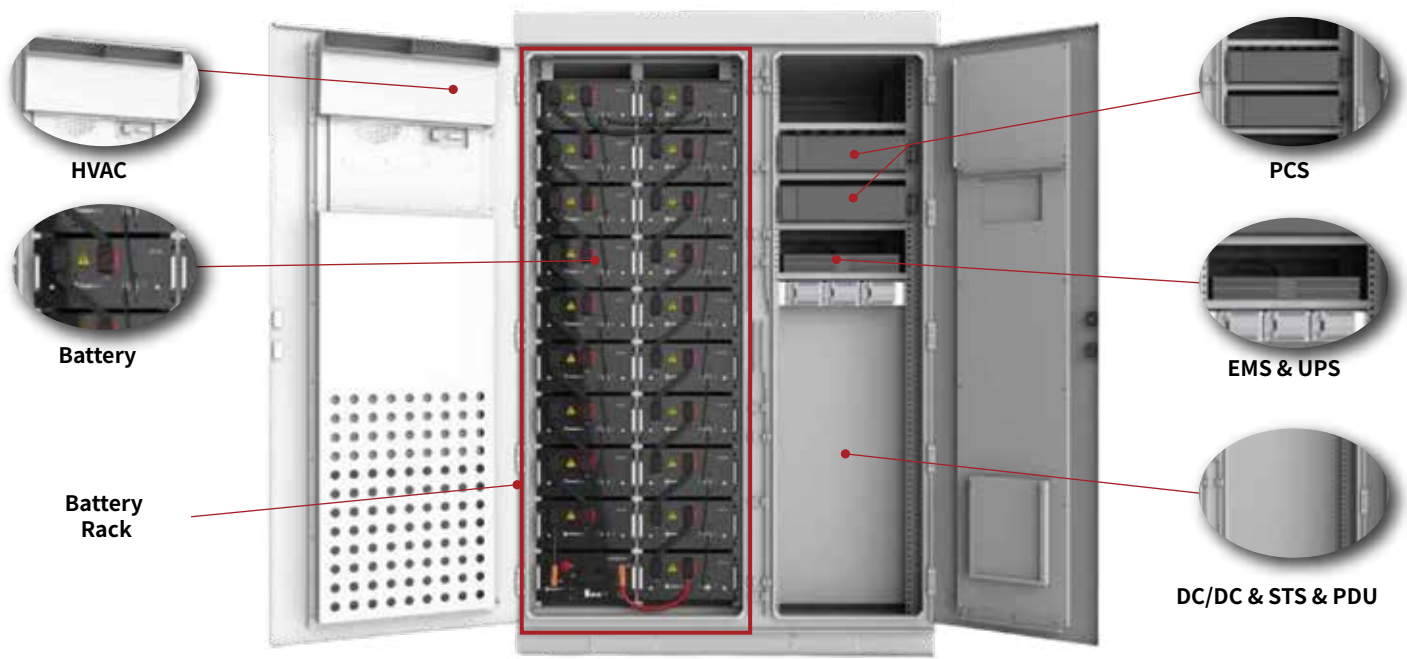
Open battery interface ensures integration into any energy system

Integrated local controller enables single point communication interface

Fast state monitoring and faults recording enable pre-alarm and fault locatio





Matrix CAIO-P Series





HVAC Heating Ventilation Air Conditioning
EMS Energy Management System
UPS Uninterruptible Power Supply
PCS Power Conversion System

DC/DC DC-DC Conversion System
STS Static Transfer Switch
PDU Power Distribution Unit

 **All In One** design with a highly integrated ESS and a protective structural design for outdoor applications

 Three-level BMS structure guarantees highly efficient cooperation and safety performance

 Modular design that includes Optional DC/DC converter, supporting DC coupling solution with ESS and PV

 Easy on-site installation saves costs

Typical Application Diagram

Outdoor Cabinet ESS for micro-grid island, hotel, farm and other suitable applications
 PCS Power optional power range: 30~60kW
 Battery optional capacity range:56.83-113.66kWh
 Be suitable for 2~4 hours back up



Matrix CAIO-P Series



Battery Data	
Rated Energy (kWh)	113.66
Rated Voltage (V)	384
Operating Voltage (V)	348-432
Max. Operation Current (A)	148/148
Max. Battery Module Qty / Rack.	12/12
Battery Cell Type	Li-ion(LFP)
Round-trip Efficiency(@0.5C)	0.95
General Data	
Dimension (W*H*D mm)	1450*2000*1100
Weight(kg)	700
Enclosure Protection Rating	IP65 (battery room)+IP54 (PCS room)
Anti-Corrosion	C3 (Optional upgrade to C5)
Operation Temperature Range (°C)	-20 to +60
Humidity	0~95% or 5%~95%
Altitude(m)	<3000
Cooling Concept (PCS Cabinet)	Forced Air Cooling
Cooling Concept (Battery Cabinet)	HVAC
Auxillary System Peak Power Requirement (kW)	3.5
Communication	Ethernet / Modbus TCP
Certification	CE / IEC62619 / UN38.3 / UN3536
On/Off Grid Switch	Optional STS module, switching time <20ms
AC Output Data / On-Grid Mode (Optional)	
Rated AC Power (kVA)	30 (Expandable to 2*30)
Rated AC Output Voltage (V)	400
Max. AC Current (A)	100
Rated AC Output Frequency (Hz)	50/60
Power Factor	0.8(leading)~0.8(lagging)
Max. THD of Current	≤3%
Isolation Method	Transformer less
Overload Capacity	110% @ 1min
Peak Efficiency	0.985
Certification	IEC62477, IEC62040, IEC62109, UL9540, AS/NZS 4777, G99, CSA 2.22, VDE4105, VDE4110
AC Output Data / Off-Grid Mode (Optional)	
Output Voltage Accuracy	≤1%
Power Factor	>0.7
Output Voltage Distortion Factor	>3%
DC/DC Data (Optional)	
Rated Power (kW)	30 (expandable to 6*30)
PV Input Voltage (V)	100~1000 (full power from 300)
Max. Current (A)	100
Max. Efficiency	0.955

Matrix CAIO-J Series



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Pre-assembly shortens constructing time and cost
Liquid cooling system extends cell life
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Integrated intelligent BMS and optional cloud EMS
Pre-alarm and faults location via fast state monitoring
- 

IP55 outdoor cabinet with C5 optional
Higher efficiency and longer cycle life
- 

Integration with ISO 26262 & IATF 16949 certificates
All stages quality assurance and control

Typical Application Diagram

Battery Data		
Rated Energy (kWh)	215kWh	430kWh
Operating Voltage (V)	648 V~ 876 V	
Battery Cell Type	Li-ion(LFP)	
PCS Data		
Rated AC Power (kW)	250 (50kW-250kW 可调)	
Grid Voltage (Vac)	400	
Max. DC Voltage (Vdc)	850	
Battery Voltages(Vdc)	500~850	
Frequency (Hz)	50/60	
Size(L*W*H) (mm)	800*2260*800	
Weight (Kg)	750	
General Data		
Dimension (L*W*H mm)	2991*2438*2896	
Weight(ton)	5.8	7.5
Anti-Corrosion	IP55	
Operation Temperature Range (°C)	-20°C to 55°C(-4°to 131°F)	
Thermal management	Liquid cooling	
Certification	GB/T 36276-2018, UL1973, UL9540, UL9540A, UN38.3, IEC62619, NFPA69, NFPA70, NFPA855,NFPA68, VDE4110	

Matrix CA Series

Be suitable for commercial buildings, industrial parks and other large consumers of electricity.

In 0.5CP condition, it is suitable for 532kWh~4.25MWh. In 0.25CP condition, it is suitable for 532kWh~8.5MWh.

Matrix CA can be compatible with most PCS, and it is recommended to match PCS with a capacity of less than 2MW.



- Each battery cabinet contains 4 battery racks.
- Each battery cabinet is equipped with 2 sets of HVAC, 1 set of aerosol FPS
- 0.25CP configures 3kw air conditioner, 0.5CP configures 5kw air conditioner



Convenient installation and expansion, reducing on-site installation costs and commissioning time



Support back-to-back installation and side outlet, no need to preset cable trench / cable rack, reduce installation space



Comes with on-board transportation, reducing transportation and installation costs

Rated Energy (kWh)	532.4
Usable Energy (kWh)	521.8
Rated Voltage (V)	1331.2
Operating Voltage (V)	1164.8~1497.6
Round-trip Efficiency(@0.5C)	≥94%
Dimension (W*D*H mm)	2200*1400*2443
Weight (kg)	5800
Max. Charge/Discharge Current (A)	200
Operating Temperature Range (°C)	-30 to +55
Humidity	5%~95% No condensing
Altitude(m)	≤3000
Communication	Ethernet / RS485 / CAN
Enclosure Protection Rating	IP54 / NEMA 3R
Rack Parallel Connection	Max. 16units (8 cabinets) in parallel (@0.25CP)
Certification	IEC62619 / UL1973 / RCM / CE EMC / FCC EN 61000-6-1&EN61000-6-3
Battery Cell Type	Li-ion(LFP)
Cooling	HVAC

Parallel Application




- For specific information, please contact Chelion.


Matrix UE Series


Be suitable for utility applications.


Matrix UE can be compatible with most PCS, such as SMA, PE, Ingeteam, SUNGROW, etc..





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Liquid cooling technology with three-level anti-leakage design.
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Pre-installed design with no battery module handling on-site. Transportation and installation costs are reduced
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Highly integrated and supports back-to-back installation. Saves up to 34% floor space
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Liquid cooling technology reduces auxiliary consumption by up to 50%
- 

Accurately thermal control over cells, increasing service life by up to 23%
- 

Complete FSS, ensuring system safety

Rated Energy(kWh)	4073.47
Rated Voltage (V)	1331.2
Voltage Range (V)	1164.8~1497.6
Dimension (W*D*H mm)	2438*6058*2896
Weight (Ton)	~36
Operating Temperature Range (°C)	-25 to +55
Humidity	<95% No condensing
Altitude(m)	<2000
Noise	<92dB @ 1m
Enclosure Protection Rating	ISO 12944, C4
Certification	IEC 62477/IEC 62619/ UL 1973/ UL 9540A
Communication	CAN / RS485 / TCP / IP
Cooling	Liquid: 50% Ethylene glycol aqueous solution Voltage Range: 400(±10%Vac),3AC+N+PE,50/60Hz Voltage Range: 230(±10%Vac), L+N+PE,50/60Hz
Auxiliary power supply (0.25P)	Maximum Power: 36.7kW @25°C @0.5P

• For specific information, please contact Chelion.



Shanghai Chelion Renewable Technology Co., Ltd.

🏠 Room 2601, Tower A, Dawning Centre, 500 Hongbaoshi Road, Changning District, Shanghai, 201103, China.
 ✉️ Info.chelion.com
 ☎️ (21)-62378993
 🌐 www.chelion.com

Chelion America LLC.

🏠 4675 Stevens Creek Blvd, Ste250, Santa Clara, CA 95051
 ✉️ info@chelion.us
 ☎️ (408)-933-3974
 🌐 www.chelion.us

Chelion Australia Pty Ltd.

🏠 L13, 144 Edward St, Brisbane City, QLD 4000, Australia
 ☎️ 1300 208 962
 🌐 www.chelion.com.au

Chelion Japan Co., Ltd.

🏠 27F Shinjuku Square Tower, 6-22-1 NishiShinjuku, Shinjuku-ku, Tokyo, 163-1127, Japan
 ☎️ 03-6258-1677
 🌐 www.chelion.jp

Chelion Iberia, S.L.

🏠 Calle José Echegaray 8, Edificio 3, 1º, 28232, Las Rozas de Madrid (Madrid), España
 ✉️ info@chelion.eu
 ☎️ +34 918398560
 🌐 www.chelion.eu

Chelion Germany GmbH i.Gr.

🏠 Lurgiallee 10-12, 60439 Frankfurt am Main
 ☎️ +49 17675312695
 ✉️ tingting.sun@chelion.com