

zeroCO₂ Emblema

Modular by nature, scalable by vocation Freedom to design energy

zeroCO₂ **Emblema** is the Battery Energy Storage System (BESS) engineered to overcome space and power limitations in the C&I and Utility-Scale sectors.

Based on a flexible, interlocking architecture that combines conversion and storage units (Power Skid) with dedicated expansion cabinets (Battery Skid), Emblema harmonizes kW and kWh to adapt to the site's load profile. Entirely factory-preassembled and C4-certified for harsh environmental conditions, the system integrates fractional industrial inverters and latest-generation liquid-cooled CATL cells, orchestrated by the predictive intelligence of the proprietary zeroCO₂ EMS.

- ✓ **Tailored Power:** Scalability from 144 to 720 kW AC per single block, expandable in parallel via multi-skids for multi-megawatt power plants.
- ✓ **Record Energy Density:** up to 4.9 MWh (CATL Tener R2) in just a 26 m² footprint, drastically reducing space requirements and civil engineering costs.
- ✓ **Certified Hardware & Safety:** CATL liquid cabinet with UL 9540A safety, integrated fire detection and aerosol suppression system, and transformerless inverter (98.5%) with single-cell diagnostics.
- ✓ **Dynamic Continuity (iGCU):** Ultra-fast EPS transition (<80 ms) and integrated Black Start for maximum resilience of critical corporate loads.
- ✓ **Smart EMS Included:** Multi-objective optimization for Peak Shaving, self-consumption, energy trading, and native compliance with the CEI 0-16 standard.



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	EMBLEMA 380	EMBLEMA 407	EMBLEMA 705
SYSTEM COMPOSITION			
PCS Inverter Modules [n]		1 ~ 5	
CATL Cabinet Quantity		1	
GENERAL DATA			
Dimensions (WxDxH) [mm]		3500×1700×2546	3800×1700×2585
Weight [kg] ⁽¹⁾	6,370	6,370	8,730
Inverter Topology		Transformerless	
AC PARAMETERS			
Nominal AC Power [kW]		144 x [n]	
Maximum Apparent Power [kVA]		158.4 x [n]	
AC Input Type (Connection)		3PH + N + PE	
Nominal AC Voltage [Vac]		400 ±15%	
Nominal Grid Frequency [Hz]		50 / 60	
Nominal AC Current [A]		209 x [n]	
Max AC Current [A]		269 x [n]	
DC Current Injection [%]		≤ 0.5	
Total Harmonic Distortion (THDi) [%]		≤ 3	
Power Factor		-1 / 1	
Maximum Conversion Efficiency [%]		98.5	
ENERGY STORAGE			
Max Nominal DC Power [kW]		144 x [n]	
Input Voltage Range [Vdc]		720 – 1500	
CATL Cabinets Quantity [qty]		1 – 7	
CATL String Voltage Range [V]		1040 – 1500	
C-rate	1C	0.5C	0.5C
Nominal Capacity [kWh] ⁽²⁾	379.4	407.3	705.5
Nominal AC Current [A]	285 x [n]	153 x [n]	265 x [n]
Max AC Current [A]	365 x [n]	196 x [n]	339 x [n]
Depth of Discharge (DOD)		95	
Round-Trip Efficiency (RTE) [%]		96 (@0.5C)	
ENVIRONMENTAL CONDITIONS			
Operating Temperature Range [°C]		-25 / 55 (>50 derating)	
Operating Humidity Range [RH%]		0 ~ 95 (non-condensing)	
Storage Temperature Range [°C]		-30 ~ 60	-40 ~ 60
Storage Humidity Range [RH%]		0 ~ 95 (non-condensing)	
Cooling System (Inverter / Cells)		Smart Fans / Liquid Cooled	
Max Installation Altitude [m a.s.l.]		≤ 3000 (>3000 derating)	
COMMUNICATION AND SAFETY			
Hardware Ports / Protocols		Ethernet, LAN, RS485 / Modbus TCP/IP	
Enclosure Protection Rating		IP55 (Electrical Panel) / IP56 (storage) / IP66 (PCS)	
Corrosion Resistance Class (ISO 12944)		C4	
Telemetry and Diagnostics		Single LFP cell	
Estimated Operating Life [Years]		15+	
Safety Standards		EN IEC 62477-1, IEC / EN 62619, EN IEC 63056:2020, IEC 62933-5-2 IEC 60730-1 Annex H, EN 60204-1, UKCA LVD, EN 61439-1 / EN 61439-2 (UE) 2016/631 (RfG), EN 50549-1:2019+A1:2023	
Grid Compliance		CEI 0-21:2022-11, CEI 0-16, VDE-AR-N 4110:2023-09 / VDE-AR-N 4105, ENA EREC G99	
Transportation and Environment		UN 38.3, UN 3536	

⁽¹⁾ The dimensional and weight data refer exclusively to the units supplied pre-assembled.
All infrastructure work required for installation is the sole responsibility of the client/site designer.

⁽²⁾ The actual usable energy depends on the SOC limits set by the BMS, the EMS (Energy Management System) strategies to optimize the useful life of the cells and the environmental conditions.

[n] refers to the number of inverter modules in the Power Skid



Scale power. Scale energy. Engineered for real-world performance

zeroCO₂ EMBLEMA LOGIC

Combine AC power blocks and DC battery cabinets. The colored area shows the maximum actual continuous discharge power.

PCS BLOCK (AC)



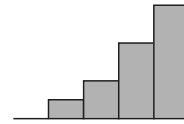
Add PCS blocks to increase power

BATTERY CABINET (DC)



Add DC cabinets to increase capacity

DELIVERABLE ENERGY



The battery charge/discharge rate (C-rate) determines the deliverable energy

POWER DELIVERY MATRIX (kW)

AC SCALABILITY POWER	
1 PCS BLOCK	720 kW
2 PCS BLOCKS	1440 kW
3 PCS BLOCKS	2160 kW
4 PCS BLOCKS	2880 kW

AC BLOCK PCS CONFIG	AC POWER (kW)	CATL ENERONE+ 1C / DC BLOCK RATED CAPACITY (kWh)							
		1	2	3	4	5	6	7	8
1 PCS BLOCK	144	379	759	1138	1518	1897	2276	2656	
	288								
	432								
	576								
	720								
2 PCS BLOCK	864								
	1008								
	1152								
	1296								
	1440								



POWER SKID



BATTERY SKID



BATTERY SKID



BATTERY SKID

CATL ENERONE+ 1C	
C-RATE	1C
CABINET ENERGY	379,4 kWh
MAX ENERGY	2656 kWh
MAX POWER	1440 kW

HOW TO BUILD THE OPTIMAL SYSTEM
MATCH POWER NEED Select the minimum number of AC blocks required to reach the power target
ENERGY SCALE Add the required number of DC cabinets to achieve the target energy capacity
CHECK C-RATE Ensure the colored zone covers your required operating power
OPTIMIZE BALANCE Guarantee an optimal operating range for the batteries

AC BLOCK PCS CONFIG	AC POWER (kW)	CATL ENERONE+ 0,5C / DC BLOCK RATED CAPACITY (kWh)							
		1	2	3	4	5	6	7	8
1 PCS BLOCK	144	407,3	815	1222	1629	2037	2444	2851	
	288								
	432								
	576								
	720								
2 PCS BLOCK	864								
	1008								
	1152								
	1296								
	1440								



POWER SKID



BATTERY SKID



BATTERY SKID



BATTERY SKID

CATL ENERONE+ 0,5C	
C-RATE	0,5C
CABINET ENERGY	407,3 kWh
MAX ENERGY	2851 kWh
MAX POWER	1440 kW

AC BLOCK PCS CONFIG	AC POWER (kW)	CATL TENER R2 0.5C / DC BLOCK RATED CAPACITY (kWh)							
		1	2	3	4	5	6	7	8
1 PCS BLOCK	144	706	1411	2116	2822	3528	4233	4939	
	288								
	432								
	576								
	720								
2 PCS BLOCK	864								
	1008								
	1152								
	1296								
	1440								



POWER SKID



BATTERY SKID



BATTERY SKID



BATTERY SKID

CATL TENER R2 0,5C	
C-RATE	0,5C
CABINET ENERGY	705,5 kWh
MAX ENERGY	4939 kWh
MAX POWER	1440 kW

Build the storage system you need today. Expand it tomorrow.

zeroCO₂ **Emblema** separates power conversion from energy capacity.

Add battery modules as your energy needs grow, independently, seamlessly, and without compromising the system.

01

POWER SKID

Power
from 144 kW to 720 kW
Capacity
379.4 kWh (@ 1C)
407.3/706 kWh (@ 0.5C)



02

1 POWER SKID + 1 BATTERY SKID

Power
from 144 kW to 720 kW
Capacity
1138.2 kWh (@1C)
1222/2116 kWh (@ 0.5C)



03

1 POWER SKID + 3 BATTERY SKID

Power
from 144 kW to 720 kW
Capacity
Up to 2.65 MWh (@1C)
Up to 2.85/4.94 MWh (@ 0.5C)



04

2 POWER SKID + 6 BATTERY SKID

Power
from 144 kW to 1440 kW
Capacity
Up to 5.3 MWh (@1C)
Up to 5.7/9.88 MWh (@0.5C)



05

2 POWER SKID + 6 BATTERY SKID

Power
from 144 kW to 1440 kW,
Capacity
Up to 5.3 MWh (@1C)
Up to 5.7/9.88 MWh (@0.5C)



POWER INDEPENDENT – Decoupled AC/DC Architecture

The Power Skid defines your exchange capacity (144 kW – 720 kW AC) regardless of the accumulated kWh



ENERGY SCALABLE – Plug & Play Battery Skids

Add Battery Skids at any time. Each module expands the system with CATL liquid-cooled cabinets.



BUILT TO GROW – Flexible, future-proof CAPEX

Modular architecture with fractional logistics blocks (Lifting Unit ≤ 10t). Designed to evolve with network challenges.

**zeroCO₂ EMBLEMA:
MODULAR. SCALABLE.
FUTURE-READY.**

ONE POWER SKID. FLEXIBLE ENERGY CAPACITY.