MODULAR LITHIUM BATTERY SYSTEM

L6

50 Ah lithium

LiFePO4 modules of 50 Ah that slide in like drawers, each with its own DC/DC converter and BMS, in cabinets of 10 or 20 modules: up to 15 cabinets for the AEC INFINITE and **lithium**-ready UPS.



L6 LITHIUM CABINETS SIDE BY SIDE

LFP
lithium iron phosphate cells

Hot-swap
modules replaced online in minutes

15
cabinets in one system

58 kWh
per cabinet with 20 modules

Product Overview
L6 Lithium Battery System

Lithium battery cabinets of 10 or 20 hot-swappable 50 Ah modules, a combiner for large systems and a three-layer battery management system, for the AEC INFINITE and lithium-ready UPS.



The L6 cabinet, door open: up to 20 modules of 50 Ah, one pulled out.

Key data

Cabinets	L6-CAB-10x50LI · L6-CAB-20x50LI · L6-CAB-EMPTY
Modules	10 or 20 × 50 Ah LiFePO4, 2.88 kWh each
Energy · power	about 29 kWh, 100 kW · 58 kWh, 200 kW
DC output	240, ±240 or 480 V DC
DC input (charge)	265, ±265 or 530 V DC
System	up to 15 cabinets; combiner for up to 8
Size	23.6 × 33.5 × 78.7 in (600 × 850 × 2,000 mm)
Weight	1,355.8 lb · 2,171.6 lb
Life	15 years, 5,000+ cycles
Listings	modules UL 1973 listed, UL 9540A and UN38.3 tested
Warranty	5 years, cabinets with their batteries

Main features

Hot-swap modules
A 50 Ah module is replaced in about 5 minutes, with the load on.

Three-layer BMS
A BMS in every module, every cabinet and the system.

Isolated DC/DC
One converter per module, fire protection module by module.

Mixed-age modules
New modules beside old ones; current shared within 3 %.

1 to 15 cabinets
A master and up to 14 slaves; a combiner joins up to 8.

10-inch touchscreen
On the master: system, cabinets, modules and cells.

CATALOG CODES

L6-CAB-10x50LI · L6-CAB-20x50LI · L6-CAB-EMPTY · L6-COMBINER · L6-MOD-50LI

Front View
L6 Lithium Battery System

The master cabinet with its touchscreen beside a slave cabinet with its AEC panel: both 23.6 in wide and 78.7 in high, with up to 20 modules of 50 Ah behind the door.



1. **10-inch touchscreen**
   on the master: system, cabinets, modules and cells

2. **AEC panel with lamps**
   on every slave: run, alarm and fault lamps

3. **AEC logo**
   on the top frame of every cabinet

4. **Door handle with lock**
   the modules, breakers and BMS behind the door

5. **Perforated front door**
   air in at the front; out at the rear, or the top

6. **Slave cabinet**
   up to 14 beside the master, bolted side by side

7. **Base**
   anchored to the floor with expansion bolts

Internal View
L6 Lithium Battery System

The cabinet with its door open: the two battery breakers and the communication module at the top, the modules in two columns, one of them pulled out.



1. **Battery breaker 1**
   first DC switch of the cabinet
2. **Battery breaker 2**
   second switch; each serves a group of modules
3. **Communication module**
   the cabinet BMS: ports to the UPS, the network and the other cabinets
4. **Battery modules**
   up to 20 × 50 Ah in two columns; blank panels on empty slots
5. **Touchscreen or lamp panel**
   in the door: 10-inch touchscreen on the master, lamps on each slave

Touchscreen Interface
L6 Lithium Battery System

The 10-inch touchscreen of the master cabinet shows the system, each cabinet, each module and each cell, records charge and discharge and keeps the events.



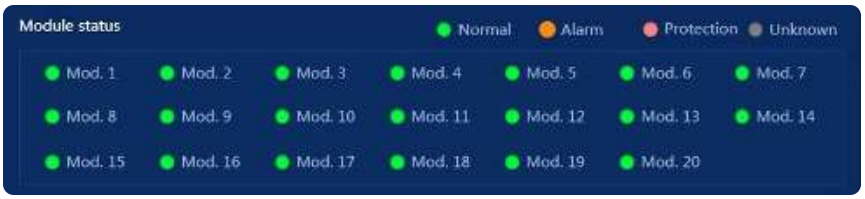
System home
Work mode, system status, current, voltage and SOC at a glance.

10" touchscreen on the master cabinet

3 lamps on each slave: run, alarm, fault

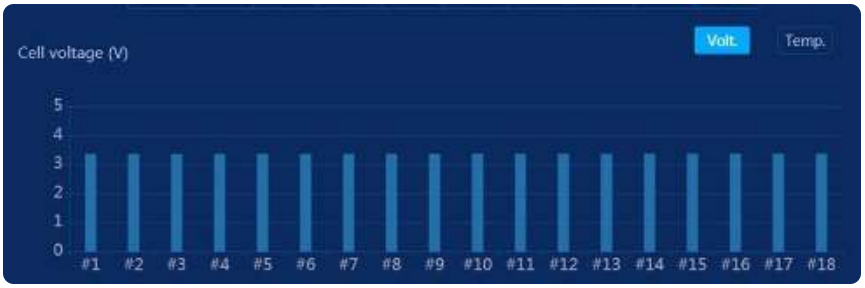
3 layers of BMS: module, cabinet, system

TCP/IP and RS485 to the network and the UPS



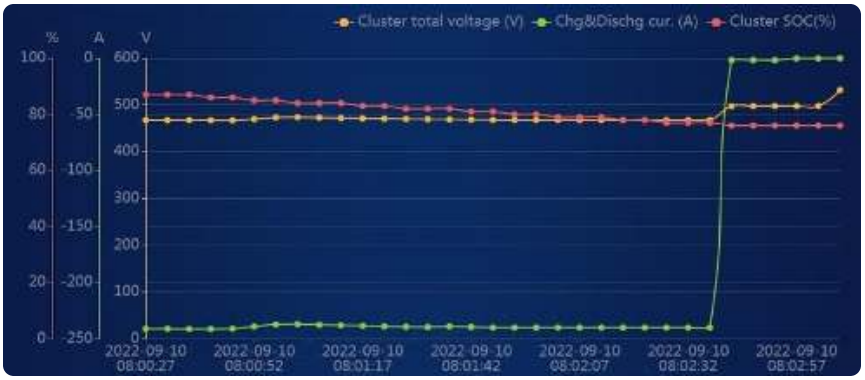
Cabinet status

The state of the 20 modules of a cabinet, normal, alarm or protection; above it (not shown) communication, fire control, insulation and the two DC breakers.



Cell data

The voltage of the 18 cells of one module, bar by bar; the Volt. and Temp. tabs above the chart switch to their temperature.



Charge and discharge record

Cluster voltage, current and SOC over time, here a charge starting at 08:02; event, data and fault records on the same menu.

Also on the screen: health details, the health of every module of a cabinet · module status and data, the DC module state, port voltage and current · system information, rated energy, voltage, modules, highest and lowest cell · event, data and fault records.

Lithium Battery Technology
L6 Lithium Battery System

Every module has its own battery management unit and a bidirectional DC/DC converter. With the knob locked it is held in the cabinet and delivers its power; a faulty module leaves the system by itself.



Front: handle, indicators and the locking knob



Rear: fans, the DC output connector and the rear handle

1. **Front handle**
2. **Indicators**: run, alarm, fault
3. **ON/OFF knob**: locks the module in
4. **Fans**
5. **Output connector**
6. **Rear handle**

The module

Code	L6-MOD-50LI, 50 Ah
Cells	18 × 3.2 V LiFePO4, 57.6 V
Energy	2.88 kWh; DC/DC output 10 kW
Size	8.8 × 26.2 × 6.0 in (223 × 665 × 152 mm)
Weight	81.6 lb (37 kg)
Discharge rate	4C
Charge current	up to 40 A, 20 A by default
SOC · SOH	accuracy ≥ 95 % · ≥ 90 %



The locking knob

Knob open: the module is free and off. Knob closed: locked in, it delivers DC by itself after its self-test.

Hot swap, about 5 minutes

Unlock the knob, pull the module by its handles, push the new one in and lock it: after a self-test of about 10 s it joins the system, with the load supplied.

One converter, three modes

CHARGE
Mains normal, modules not full
The DC/DC steps the UPS charge voltage of 265, ±265 or 530 V down and charges at constant current, limited voltage.

SLEEP
Mains normal, modules full
No charge and no discharge until the voltage or the SOC falls below the setting: no float on the cells.

DISCHARGE
Mains failure
The DC/DC boosts the cells to 240, ±240 or 480 V and supplies the UPS, module by module.

Output voltage and UPS matching

- Output 240, ±240 or 480 V DC, to the battery voltage of the UPS.
- The UPS charge voltage must match the L6 input, or it will not charge.
- With the INFINITE: L6 output set to 480 V DC, inside the INFINITE lithium window of 384–640 V (512 V rated).
- UPS load within 90 % of the L6 rating, the guideline; AEC sets each margin; modules and cabinets share the current within 3 %.

LFP	4C	≧ 95 %	81.6 lb
lithium iron phosphate	cell discharge rate	SOC accuracy	per module

Advanced Battery Management
L6 Lithium Battery System

LiFePO4 modules in parallel, each with its own DC/DC, compared with a UPS and a separate VRLA battery cabinet; the three-layer battery management, the safety functions and the listings.

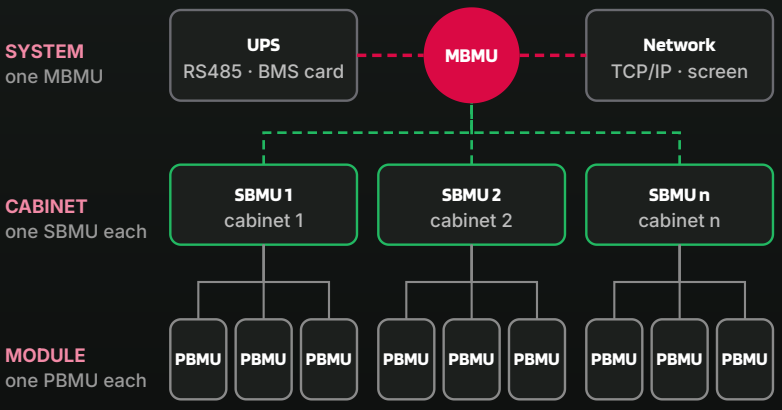
LITHIUM MODULES

Service and monitoring, module by module

≈ 5 min
to change a module, with the load supplied

18
LiFePO4 cells in series per module: 57.6 V, 2.88 kWh

THREE-LAYER BATTERY MANAGEMENT



Each layer watches the one below.

Packs in series
Packs stacked in series to the UPS voltage, as with lead-acid: a weak or failed pack limits or stops the string.

L6 modules in parallel
Each module reaches the UPS through its own isolated DC/DC and PBMU: a fault stays in its module.

	L6 · lithium LFP	UPS + VRLA battery cabinet
Installation	**cabinets side by side; modules slid in from the front**	heavy blocks: floor area and floor load to check
Battery life	**15-year life · 5,000+ cycles**	about three sets in one UPS life, replaced about twice
Battery service	**one module at a time, load supplied**	whole string; checked at least twice a year
A faulty unit	**leaves the system, the others carry on**	blocks in series: one fault affects the string
Monitoring	**every cell, module and cabinet; SOC and SOH**	no health analysis, no early warning

VRLA column: lead-acid limits, indicative, not a test.

Fire and insulation protection

Fire protection per module
Temperature is watched module by module: a fault is answered where it starts.

On-line insulation monitoring
Checked while the system runs: a leak is located before it becomes a short circuit.

Cell-level monitoring

Cell-level data
Voltage and temperature of every cell, with the faulty one located.

Mixed-age modules
Adaptive SOC: new modules beside old ones; current shared within 3 %.

Expansion and voltage matching

Expansion
Add modules, or cabinets: up to 15 cabinets in one system.

Matches the UPS
240 V, 480 V or ±240 V output, to suit the UPS DC bus.

TESTED
UN38.3

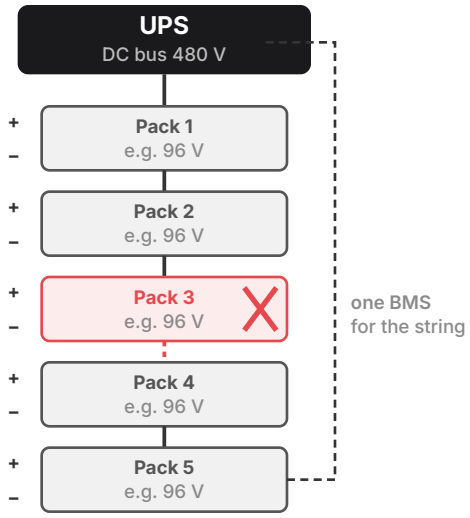
All eight UN38.3 tests, T.1–T.8, passed at the first cycle and after 25 cycles on the 50 Ah module (57.6 V, 2,880 Wh), by an independent accredited laboratory.

Modules UL 1973 listed
UL 9540A tested
5,000+ cycles, 15-year life

Battery Architecture
L6 Lithium Battery System

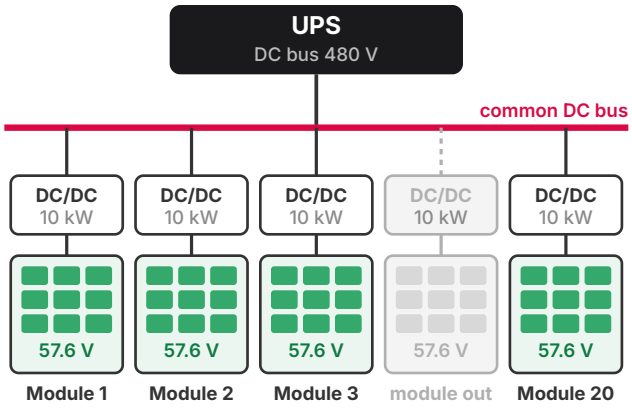
Two ways to build a **lithium** battery for a UPS: packs stacked in series on one string, or AEC L6 modules in parallel, each with its own DC/DC converter. How each one behaves on a fault, when the system grows and as the batteries age.

Conventional: packs in series
No DC/DC: the cells set the bus voltage



Pack voltages add up to the bus:
one open pack stops the whole string

AEC L6: modules in parallel
An isolated DC/DC in every module



Each module: 18 LiFePO4 cells, BMS, isolated DC/DC
A faulty module leaves the system:
19 of 20 modules carry on, 190 of 200 kW

Side by side

	Packs in series	L6 modules in parallel
Bus voltage	the sum of the packs: set by the number of packs	set by the DC/DC: 240, ±240 or 480 V DC
One unit fails	the string opens: no backup from that string	the module leaves the system; the others carry on
Replacement	string off, packs matched to the others	hot swap, about 5 minutes, load supplied
Old and new together	the weakest pack limits the whole string	new modules beside old ones, current shared within 3 %
Growing the system	a whole new string of identical packs	one module (10 kW) or one cabinet at a time, up to 15
Charging	the UPS charger drives the string directly	each DC/DC charges its own module
A fault	can spread along the string	stays inside its module: isolated DC/DC, fire protection per module
Monitoring	one BMS for the string	three layers: module, cabinet, system; every cell

Three examples · illustrative

One unit fails
power available, 20 units

Series 0 %
L6 95 %

Series: the string opens. L6: 19 of 20 modules, 190 of 200 kW.

Add capacity
smallest step, one cabinet

Series 100 %
L6 5 %

Series: a full string. L6: one 10 kW module, 5 % of a 200 kW cabinet.

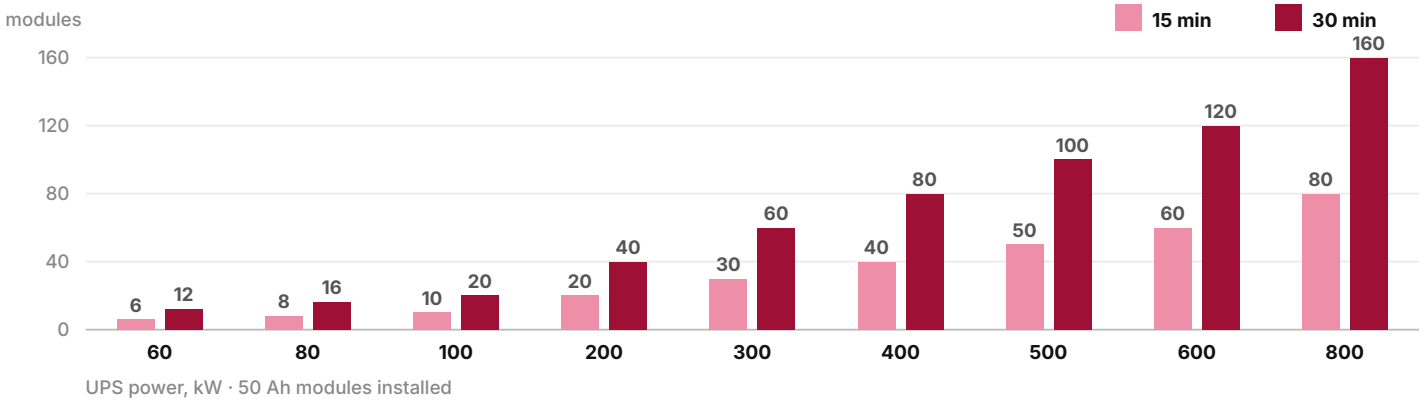
Mixed ages
share of each unit used

Series 80 %
L6 100 %

Series: the weakest pack (here 80 %) sets the string. L6: each module gives its own.

Battery Runtime
L6 Lithium Battery System

Every UPS power, 15 or 30 minutes: the L6 cabinets and 50 Ah modules, at the start of life. Each module adds 10 kW of DC/DC power; a cabinet holds 20.



50 Ah modules · 57.6 V · 2.88 kWh each

number of L6 cabinets · minutes, 50 Ah modules installed

UPS power	1	2	3	4	5	6	7	8
60 kW	**15 · 30** 6 · 12 mod.							
80 kW	**15 · 30** 8 · 16 mod.							
100 kW	**15 · 30** 10 · 20 mod.							
200 kW	**15** 20 mod.	**30** 40 mod.						
300 kW	–	**15** 30 mod.	**30** 60 mod.					
400 kW	–	**15** 40 mod.		**30** 80 mod.				
500 kW	–	–	**15** 50 mod.		**30** 100 mod.			
600 kW	–	–	**15** 60 mod.			**30** 120 mod.		
800 kW	–	–	–	**15** 80 mod.				**30** 160 mod.
modules, up to	20	40	60	80	100	120	140	160

UPS power in kW; minutes at the start of life. –: not possible, each cabinet delivers up to 200 kW (20 modules × 10 kW). Blank: not in the table; AEC sizes every system with its margin.

READING THE TABLE

600 kW, one code

Three full cabinets of 20 modules hold 600 kW for 15 minutes; for 30 minutes the table doubles them, 6 cabinets and 120 modules.

ONE CODE
INF-600+3xL6-CAB-20x50LI

BACKUP TIME
15 min full load · 30 min half

AEC SIZING

20
modules per cabinet

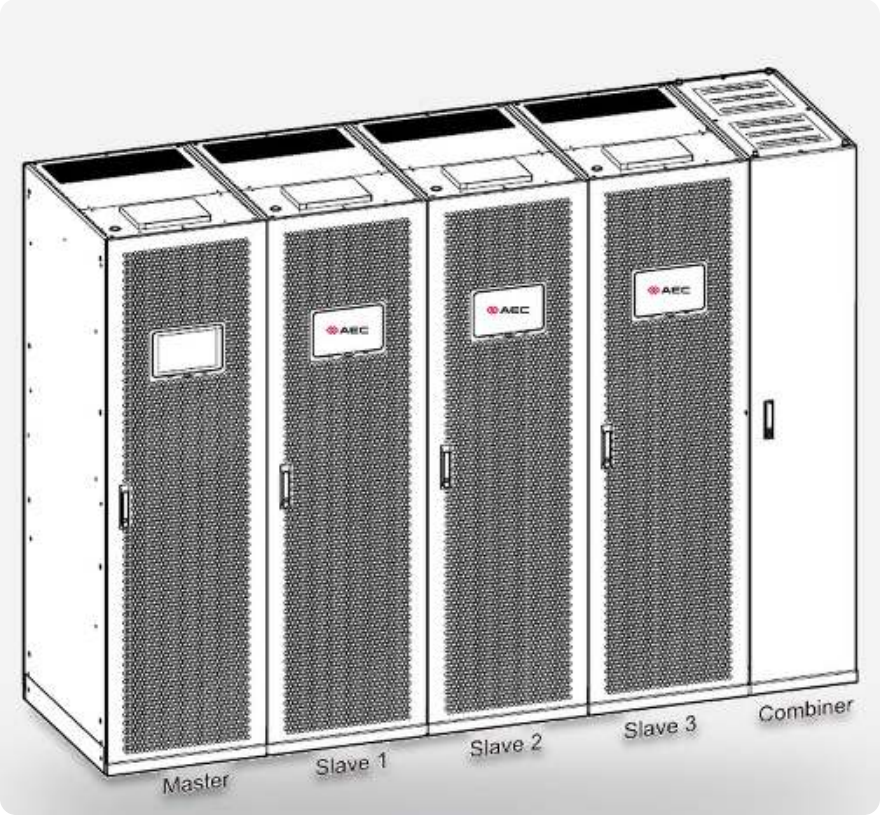
10 kW
DC/DC output per module

15 min
at 200 kW, one cabinet

1 module
steps for a precise size

Parallel and Communication
L6 Lithium Battery System

Up to 20 modules of 50 Ah in one cabinet; above that, a master and slave cabinets in parallel, up to fifteen, with a combiner cabinet joining their outputs.



Master with the touchscreen, three slaves with lamps and the combiner, side by side; slaves and combiner go left or right of the master.

Combiner cabinet

Code · model	L6-COMBINER · L6-C-4000
Cabinets	up to 8 L6 cabinets per combiner
Output	4,000 A max; to the UPS from the top or the bottom
Size · weight	15.7 × 33.5 × 78.7 in · 308.6 lb (140 kg)
Busbars	+, N and −; cabinets on the sides, the UPS in the middle



Combiner cabinet L6-C-4000, 15.7 in wide, closed door: the outputs of up to eight cabinets on its busbars.

NETWORK

Networking device

Eight ports, up to seven cabinets each; needed from two cabinets up.

OPTION

In-row rear frame

Extends the cabinet depth to line up with a modular UPS or IT racks.

OPTION

Blank panels

Close the empty module slots; fitted like a module.

Communication module

Port	Use
RS485	RJ45: communication with the UPS (Modbus)
LAN	RJ45: monitoring by a computer, cascade between cabinets
EPO	the external emergency switch, cascaded between the cabinets
AC IN · OUT	160–300 V AC auxiliary supply for the screen, BMS and fans; cascade to the next cabinet

15
cabinets in parallel

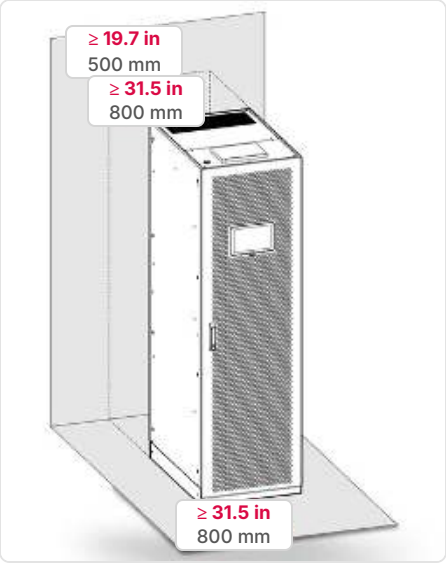
8
cabinets per combiner

TCP/IP · RS485
communication

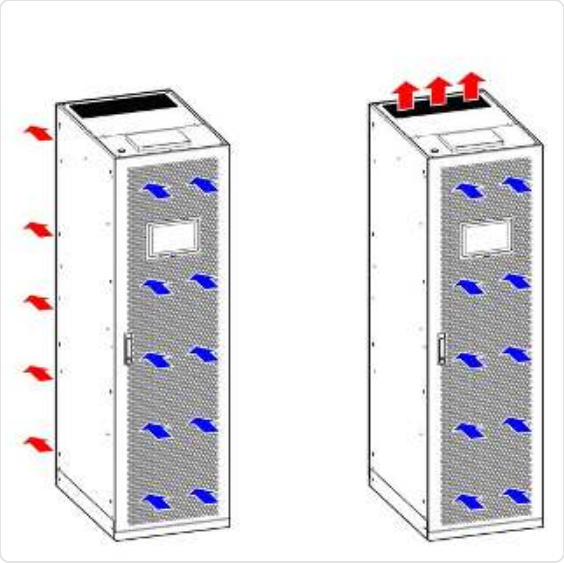
EPO
shared by the cabinets

Installation and Dimensions
L6 Lithium Battery System

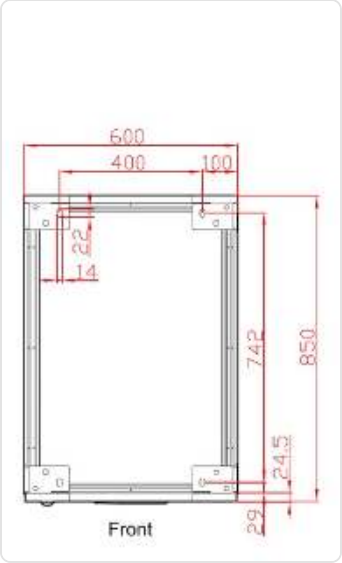
Clearances, airflow, floor fixing, site and storage conditions, and the size and weight of every code; AEC engineers size the system and commission it with the UPS.



Clearances: front and rear ≥ 31.5 in (800 mm), top ≥ 19.7 in (500 mm); the same for cabinets in parallel.



Airflow: left, front inlet and rear outlet; right, top outlet with the top cover plate of holes removed.



Floor fixing (drawing in mm): 23.6 × 33.5 in cabinet, 4 × Ø 0.55 in holes.

Site

- Indoors, ventilated, away from water, heat, dust, corrosive or salty air and direct sun; never in the open air.
- 32–104 °F (0–40 °C), best 68–86 °F (20–30 °C): warmer shortens the life, colder the backup; 5–95 % RH non-condensing.
- Up to 13,123 ft (4,000 m), derated above 6,562 ft (2,000 m).
- Air in at the front, out at the rear, or out at the top with its top cover plate removed; vents kept clear.
- DC cables from the top; 160–300 V AC auxiliary supply for the BMS, screen and fans.

Floor and anchoring

- Concrete or other non-combustible floor; four Ø 0.55 in (14 mm) holes, 15.7 in (400 mm) across and 29.2 in (742 mm) front to back.
- Expansion bolts standing 1.2–2.0 in (30–50 mm) out of the floor, or a U-steel base; cabinets of one system bolted side by side.

Transport, storage and modules

- Cabinet in a honeycomb carton on a wooden pallet, modules in their own cartons; forklift from the side, kept upright.
- Modules shipped at 20–50 % SOC; storage 14–113 °F (−10–45 °C), best 32–95 °F (0–35 °C), 7.9 in (200 mm) off the floor.
- Idle modules charged every 1 to 6 months, by their SOC; 4 h at room temperature before start-up.
- Each module carried by several people; slid in from the bottom up, knob unlocked; a lifting platform above 3.3 ft (1 m); blank panels on empty slots.

Start-up by AEC. Knobs locked, self-test about 10 s, voltage checked on the touchscreen, breakers closed, then the UPS.

Sizes and weights

Code	What	W × D × H	Weight
L6-CAB-10x50LI	10 × 50 Ah, about 29 kWh	23.6 × 33.5 × 78.7 in (600 × 850 × 2,000 mm)	1,355.8 lb
L6-CAB-20x50LI	20 × 50 Ah, 58 kWh	23.6 × 33.5 × 78.7 in (600 × 850 × 2,000 mm)	2,171.6 lb
L6-COMBINER	up to 8 cabinets, 4,000 A	15.7 × 33.5 × 78.7 in (400 × 850 × 2,000 mm)	308.6 lb
L6-MOD-50LI	18 cells, 57.6 V, 2.88 kWh	8.8 × 26.2 × 6.0 in (223 × 665 × 152 mm)	81.6 lb

Technical Specifications
L6 Lithium Battery System

Model	L6-CAB-10x50LI	L6-CAB-20x50LI
CABINET		
Modules	10 × 50 Ah	20 × 50 Ah
Energy	about 29 kWh	58 kWh
Rated discharge power	100 kW	200 kW
Output voltage · discharge	240, ±240 or 480 V DC	
Input voltage · charge	265, ±265 or 530 V DC	
Discharge overload	125–135 % 1 min · 135–150 % 30 s · > 150 % 500 ms	
Current unbalance	≤ 3 % between modules and cabinets	
Cabinets in parallel	up to 15; combiner L6-C-4000 for up to 8	
W × D × H	23.6 × 33.5 × 78.7 in (600 × 850 × 2,000 mm)	
Weight	1,355.8 lb (615 kg)	2,171.6 lb (985 kg)
MODULE L6-MOD-50LI		
Cells · energy	18 × 3.2 V LiFePO4 · 2.88 kWh	
Discharge rate · charge current	4C · up to 40 A, 20 A by default	
DC/DC output	10 kW	
Size · weight	8.8 × 26.2 × 6.0 in · 81.6 lb (37 kg)	
SOC · SOH accuracy	≥ 95 % · ≥ 90 %	
FUNCTIONS		
Standard	cold start, self-start when the mains returns, EPO, SOC balance on discharge, module-level fire control, on-line insulation detection	
Protection	over-temperature, over-current, short circuit, over- and under-voltage, low SOC	
GENERAL		
Display	10-inch touchscreen on the master cabinet; run, alarm and fault lamps on each slave	
Communication	TCP/IP, RS485 (Modbus to the UPS)	
Operating · storage	32–104 °F (0–40 °C) · 14–113 °F (–10–45 °C)	
Humidity · altitude	5–95 % RH non-condensing · 13,123 ft (4,000 m), derated above 6,562 ft (2,000 m)	
Noise · protection	< 65 dB · IP20	
Certification	modules UL 1973 listed, UL 9540A tested; UN38.3 tested, T.1–T.8	
Warranty	5 years on the cabinets with their batteries	
INSTALLATION		
Clearances	front ≥ 31.5 in (800 mm), to open the door and pull the modules; rear ≥ 31.5 in (800 mm), for the air; top ≥ 19.7 in (500 mm) above	
Floor · placing	concrete or other non-combustible floor, anchored with expansion bolts; cabinets of one system bolted side by side	
Auxiliary supply · cables	160–300 V AC for the BMS, screen and fans; DC cables from the top; AEC sizes and commissions the system with the UPS	

Sizes and weights of every code: p. 145. Specifications are subject to change without notice.

Ordering Information
L6 Lithium Battery System

L6 cabinets come with 10 or 20 modules, or empty to be filled in stages; modules and the combiner are sold on their own. With the INFINITE, one code orders the UPS and its L6 cabinets.



L6-CAB-20x50LI open: 20 modules of 50 Ah behind the door, one pulled out.

Code	Description
L6-CAB-10x50LI	L6 lithium cabinet with 10 × 50 Ah modules, BMS and touchscreen or lamps, about 29 kWh
L6-CAB-20x50LI	L6 lithium cabinet with 20 × 50 Ah modules, 58 kWh
L6-CAB-EMPTY	L6 cabinet without modules, for up to 20 × 50 Ah
L6-MOD-50LI	LiFePO4 module 50 Ah, 2.88 kWh, with its DC/DC converter
L6-COMBINER	Combiner cabinet L6-C-4000, for up to 8 L6 cabinets

How to size

- UPS power (kW) and the backup time you need.
- 15 or 30 minutes: the modules and cabinets to match.
- One cabinet up to 20 modules; a master and slaves above that.
- AEC confirms every system with its margin.

INFINITE with L6: one code for the UPS and its lithium

7 standard systems, 100 to 600 kVA, each with its L6 cabinets and its published backup time at full load: the codes and the battery page that shows how the two connect are in the INFINITE catalog.

INFINITE

catalog 2026, ordering guide

One code, the UPS and its battery



INFINITE cabinet, not to scale

+



L6-CAB-20x50LI, one of the three

×3 L6 cabinets with the 600 kVA INFINITE

INF-600+3xL6-CAB-20x50LI: 15 min at full load, 30 min at half; one code for the UPS and its 3 cabinets.

24/7
technical assistance by phone and WhatsApp

<30 min
WhatsApp reply to technical and sales questions

5 years
on L6 cabinets with their batteries

Miami
AEC UPS USA: stock and training center

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