



MATE
OPTRONICS

LiFePO4 Battery Energy Storage Solutions

PRODUCT CATALOG 2026

Reliable Energy Solutions
For A Sustainable Future



Shanghai Mate Optronics Co., Ltd.
No.281-289 Lixin Road, Fengxian District, Shanghai, China
sales@mateoptronics.com

Energy On Your Terms



About Us

Shanghai Mate Optronics Co., Ltd. is a professional supplier of LiFePO4 energy storage solutions. We supply residential, commercial and industrial battery systems worldwide — from wall-mounted and rack batteries to high-voltage cabinets and containerized ESS.

Factory Advantage

Direct manufacturer partnership, competitive pricing.

Flexible Solutions

OEM/ODM support for project requirements.

Professional Service

Technical support from storage experts.

Certified Quality

CE, RoHS, UN38.3, IEC62619.

6,000+ Cycle Life

LFP cells, deep discharge rated.

Global Delivery

Export-ready, worldwide shipping.

Production & Quality Control

01

Cell Inspection

Battery cell quality inspection before assembly.

02

Cell Matching

Voltage and capacity matching for consistency.

03

PACK Assembly

Professional assembly and structural integration.

04

Laser Welding

High-precision welding for stable connection.

05

Aging Test

Charge & discharge test before delivery.

Product Portfolio



Wall-mounted Battery



Stackable Battery



Wheeled Battery



All-in-one ESS



Rack-mounted Battery



High-voltage Cabinet



C&I Energy Storage



Containerized ESS

All-in-One ESS

16 kWh Wheeled Portable

DUAL MPPT · 10 kW PLUG & PLAY



KEY FEATURES

- Wheel-mounted plug & play
- Dual MPPT, 200A output
- Parallel up to 10 packs / 6 inverters
- Conformal coating

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery

Cell chemistry	LFP 314Ah
Rated energy	16 kWh
Expandable capacity	16 ~ 160 kWh (1 ~ 10 packs)
Standard charge/discharge current	50 ~ 100 A
Series-parallel	16S1P per pack
Max. output current	200 A
Rated voltage	51.2 V
Operating voltage range	44.8 ~ 57.6 V
Battery cycle life	6,000 cycles

PV & AC

Max. PV input power	6,000W + 6,000W (dual MPPT)
MPPT voltage range	90 ~ 450 VDC
Number of MPPT	2
Max. PV current per MPPT	22 A
Rated AC input/output power	10 kW
Expandable AC power	10 ~ 60 kW (1 ~ 6 inverters)
Rated AC voltage	220 / 230 / 240 V (adjustable)
Rated AC frequency	50 / 60 Hz
Display	LCD display

Mechanical & General

Inverter dimensions	L695 × W270 × H400 mm
Battery pack dimensions	L695 × W270 × H495 mm
Caster height	85 mm
Weight	~148 kg
IP rating	IP20
Altitude	4,000 m (derating above 2,000m)
Operating temperature	-10 ~ 55°C (derating above 45°C)
Relative humidity	5% ~ 95% (conformal coating)
Safety protection	Reverse polarity, PV night reverse-current, over/under V, short, overload, over-current, over-temp, parallel error, sync fault
Communication	USB / RS485 (WiFi / GPRS) / dry contact
Installation	Plug & play
Certification	CE, RoHS, UN38.3, IEC62619

All-in-One ESS

LB-51.2V 100AH + 6.2KW

5.12 kWh · BUILT-IN INVERTER



Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery

Voltage	51.2 V
Capacity	100 Ah
Energy	5.12 kWh
Max. current	100 A
Charge cut-off V	54.8 V
Discharge cut-off V	43.2 V
Weight	49 / 52 kg
Size	450×186×700 mm

Inverter

Output voltage	230 Vac ±5%
Peak power	6,200 VA
Input	230 Vac (110–120 ±3V)
Battery voltage	48 Vdc
MPPT range	60–500 Vdc
Best PV V	360–430 Vdc
Max. PV current	18 A
Max. PV charge	100 A
Max. AC charge	80 A

General

Oper. temp.	-10 ~ +50 °C
Humidity	20%–75% RH

KEY FEATURES

- Battery + inverter in one
- Single-phase home backup
- PV self-consumption

Floor-Stacked AIO

Floor-Stacked AIO

F5 Series 5.22– 20.88 kWh

5 kW SINGLE-PHASE INVERTER



Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery

Model	F5-5K / F5-10K / F5-15K / F5-20K
Cell capacity	102 Ah
Rated energy	5.22 / 10.44 / 15.66 / 20.88 kWh
Series-parallel	1P16S / 2P16S / 3P16S / 4P16S
Rated voltage	51.2 V
Operating voltage range	44.8 ~ 57.6 VDC
Battery cycle life	6,000 cycles

PV Input

Max. PV input power	5,000 W
Max. PV input voltage	500 V
MPPT voltage range	150 ~ 500 V
Start-up voltage	370 V
Number of MPPT	1
Max. PV current per MPPT	30 A

AC Output & General

Rated AC input/output power	5,000 W
Rated AC voltage	220 / 230 / 240 V (adjustable)
Rated AC frequency	50 / 60 Hz
Max. output current	22 A
Current THD	<3%
Power factor	0.8 leading ~ 0.8 lagging
Off-grid/grid switchover	20 ms
Grid connection	Single phase
Dimensions (L×W×H)	634×170×771 / 1,146 / 1,521 / 1,896 mm
Weight	72.8 / 124.8 / 176.8 / 228.8 kg
Altitude	4,000 m (derating above 2,000m)
Display	LCD display
Communication	CAN / RS485
IP rating	IP21
Operating temperature	-15 ~ 60°C (battery: 0 ~ 40°C)
Relative humidity	20% ~ 95% (no condensing)
Installation	Floor-standing
Certification	CE, RoHS, UN

KEY FEATURES

- Modular floor stack, 4 capacities
- Built-in 5 kW inverter + PV
- 20 ms backup switchover

Wall-Mounted AIO

Wall-Mounted AIO

W5 Series 5.22– 20.88 kWh

5 kW · SPACE-SAVING



Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery

Model	W5-5K / W5-10K / W5-15K / W5-20K
Cell capacity	102 Ah
Rated energy	5.22 / 10.44 / 15.66 / 20.88 kWh
Series-parallel	1P16S / 2P16S / 3P16S / 4P16S
Rated voltage	51.2 V
Operating voltage range	44.8 ~ 57.6 VDC
Battery cycle life	6,000 cycles

PV Input

Max. PV input power	5,000 W
Max. PV input voltage	500 V
MPPT voltage range	150 ~ 500 V
Start-up voltage	370 V
Number of MPPT	1
Max. PV current per MPPT	30 A

AC Output & General

Rated AC input/output power	5,000 W
Rated AC voltage	220 / 230 / 240 V (adjustable)
Rated AC frequency	50 / 60 Hz
Max. output current	22 A
Current THD	<3%
Power factor	0.8 leading ~ 0.8 lagging
Off-grid/grid switchover	20 ms
Grid connection	Single phase
Dimensions (L×W×H)	634×170×771 / 1,146 / 1,521 / 1,896 mm
Weight	60.8 / 109.6 / 158.4 / 207.2 kg
Altitude	4,000 m (derating above 1,000m)
Display	LCD display
Communication	CAN / RS485
IP rating	IP21
Operating temperature	-15 ~ 60°C (battery: 0 ~ 40°C)
Relative humidity	20% ~ 95% (no condensing)
Installation	Wall-mounted
Certification	CE, RoHS, UN38

KEY FEATURES

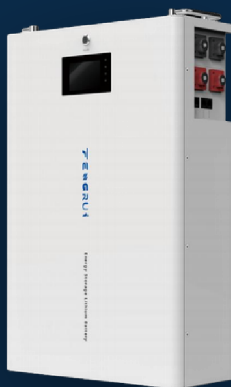
- Compact wall hub
- Expandable 5.22–20.88 kWh
- Remote smart monitoring

Wall-Mounted Battery

Wall-Mounted Battery

LB-W5K 5.12 / 10.24 kWh

51.2V · 100Ah · 100A



Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery

Model	LB-W5K
Chemistry	LFP
Configuration	1P16S
Rated energy	5,120 Wh
Rated capacity	100 Ah
Rated voltage	51.2 V
Operating range	44.8–57.6 V
Standard current	50 A
Max. current	100 A
Available capacities	5.12 / 10.24 kWh

Mechanical

Dimensions	400×170×610 mm
Packing dims.	494×270×704 mm
Weight	42 kg (48 kg packed)
Display	LCD
IP rating	IP20
Installation	Wall-mounted

General

Communication	CAN / RS485
Operating temp.	-20 ~ 60 °C
Humidity	0–95% non-condensing
Altitude	4,000 m
Cycle life	6,000 cycles
Certification	CE, RoHS, UN38.3, MSDS
Safety	Over-chg/dchg, temp, over-current, short, cell balance

KEY FEATURES

- Space-saving wall mount
- Two capacities
- Intelligent BMS

Wall-Mounted Battery

Wall-Mounted Battery

LB-51.2V 100AH Wall

5.12 kWh · 16S1P



KEY FEATURES

- Slim wall design
- 4.3" touch display
- Bluetooth monitoring
- Easy installation

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery	
Nominal voltage	51.2 V
Nominal capacity	100 Ah
Nominal energy	5.12 kWh
Combination	16S1P
Display	4.3" touch screen
Bluetooth	Yes
Max. charge current	100 A
Max. discharge current	100 A
Charge cut-off V	58.4 V
Discharge cut-off V	43.2 V
Mechanical	
Battery weight	49 kg
Battery size	626×375×150 mm
Packaging size	726×475×250 mm
Comm.	RS485/RS232/CAN
Charge temp.	0 ~ +55 °C
Discharge temp.	-20 ~ +55 °C

Rack-Mounted Battery

Rack-Mounted Battery

FJ48100 5.22 kWh Module

19-INCH · 2-10 PARALLEL



Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery	
Built-in battery tech	LFP / 102Ah
Nominal voltage	51.2 V
Number of modules	1 / 2 / 3 / 4
Nominal energy	5.22 / 10.44 / 15.66 / 20.88 kWh
Dimensions	590×390×145 / 290 / 435 / 580 mm
Weight	46.8 / 93.6 / 140.4 / 187.2 kg
Operating voltage range	44.8 ~ 58.4 V
Standard charge/discharge	50 A
Max. charge/discharge	100 A
BMS communication	CAN / RS485
Parallel quantity	2 ~ 10 pcs
Cycle life	6,000 cycles
Mechanical & General	
Unit dimensions	590×390×145 mm
Packing dimensions	694×476×256 mm
Weight	~46.8 kg
Packing weight	~48.8 kg
Altitude	<4,000 m (derating above 2,000m)
Safety protection	Over chg/dchg, high/low temp, over-current, short circuit, cell balance
IP rating	IP20
Operating temperature	Charge 0 ~ 55°C / Discharge -10 ~ 55°C
Relative humidity	0 ~ 95% non-condensing
Installation	Rack-mounted
Certification	CE, RoHS, UN38.3

KEY FEATURES

- Standard 19" rack module
- Scalable battery wall
- 48V-compatible

Stackable Battery

Stackable Battery

LB-51.2V Stackable (200/314/600Ah)

MODULAR FLOOR-STACKED



KEY FEATURES

- Modular expandable capacity
- 6.2 kW built-in inverter
- Clean floor design
- High-voltage BMS

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery	
Nominal voltage	51.2 V
Nominal capacity	200 / 314 / 600 Ah
Nominal energy	10.24 / 16.08 / 30.72 kWh
System voltage	48 Vdc
Charge cut-off V	58.4 V
Discharge cut-off V	43.2 V
Max. charge/discharge	100 A
Battery size	520×480×620 / 800 / 1340 mm
Weight	95 / 140 / 275 kg
Inverter	
Rated capacity	6,200 W
Peak power	12,400 VA
Input voltage	230 Vac (90–280)
Output	230 Vac ±5%
Best PV V	360–430 Vdc
MPPT range	60–500 Vdc
Max. PV current	18 A
Max. AC charge	80 A
General	
Storage temp.	-15 ~ +45 °C
Humidity	20%–75% RH

Wheeled Battery

Wheeled Battery

LB-51.2V Wheeled (100/230/314Ah)

MOBILE · CASTER-BASED



Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery	
Nominal voltage	51.2 V
Nominal capacity	100 / 230 / 314 Ah
Nominal energy	5.12 / 11.78 / 16.08 kWh
Charge cut-off V	58.4 V
Discharge cut-off V	43.2 V
Max. charge current	100 / 200 / 200 A
Max. discharge current	100 / 200 / 200 A
Battery size	465×242×661 / 500×255×672 / 635×280×742 mm
Weight	49 / 95 / 136 kg
Features	
Display	Plus / push-button screen
Bluetooth	Yes
Comm.	RS485 / RS232 / CAN
Charge temp.	0 ~ +55 °C
Discharge temp.	-20 ~ +55 °C
Certification	CE61000, UN38.3, MSDS

KEY FEATURES

- Caster-based movable
- Three capacities
- 200 A continuous output

Wheeled Battery

Wheeled Battery

LB-51.2V 628AH Wheeled

32 kWh · 16S2P



Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery	
Nominal voltage	51.2 V
Nominal capacity	628 Ah
Nominal energy	32 kWh
Combination	16S2P
Display	4.3" touch screen
Bluetooth	Yes
Max. charge current	200 A
Max. discharge current	200 A
Charge cut-off V	58.4 V
Discharge cut-off V	43.2 V
Mechanical	
Battery weight	140 kg
Battery size	740×450×680 mm
Packaging size	840×550×780 mm
Comm.	RS485/RS232/CAN
Charge temp.	0 ~ +55 °C
Discharge temp.	-20 ~ +55 °C
Certification	CE61000, UN38.3, MSDS

KEY FEATURES

- High-capacity 32 kWh
- 200 A continuous
- Touch + Bluetooth

Wheeled Battery

Wheeled Battery

FN310 16 kWh Mobile

314Ah · 95% DOD



Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery

Cell chemistry	LFP
Series-parallel	1P16S
Rated energy	16 kWh
Rated capacity	314 Ah
Rated voltage	51.2 V
Operating voltage range	44.8 ~ 57.6 V
Rated charge/discharge current	157 A
BMS communication	CAN / RS485

Mechanical & General

Dimensions (L×W×H)	500×270×820 mm
Packing dimensions	540×310×860 mm
Weight	118 kg
Packing weight	130 kg
Altitude	4,000 m (derating above 2,000m)
Display	LCD
Safety protection	Over chg/dchg, high/low temp, over-current, short circuit, cell balance
IP rating	IP21
Operating temperature	Charge 0 ~ 55°C / Discharge -10 ~ 55°C
Relative humidity	0 ~ 95% non-condensing
Cycle life	>6,000 cycles
Installation	Floor-standing (with wheels)
Certification	CE, RoHS, UN38.3, IEC62619

KEY FEATURES

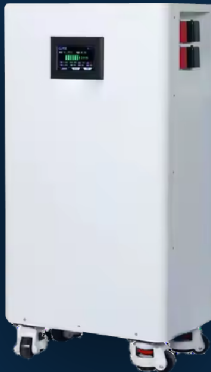
- 95% DOD
- Caster-based mobile
- High current 157 A

Wheeled Battery

Wheeled Battery

LB-51.2V 314AH Touch

16.08 kWh · 16S1P



Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery	
Nominal voltage	51.2 V
Nominal capacity	314 Ah
Nominal energy	16.08 kWh
Combination	16S1P
Display	4.3" touch screen
Bluetooth	Yes
Max. charge current	200 A
Max. discharge current	200 A
Charge cut-off V	58.4 V
Discharge cut-off V	60 V
Mechanical	
Battery weight	140 kg
Battery size	800×480×250 mm
Packaging size	900×585×470 mm
Comm.	RS485/RS232/CAN
Charge temp.	0 ~ +55 °C
Discharge temp.	-20 ~ +55 °C
Certification	CE61000, UN38.3, MSDS

KEY FEATURES

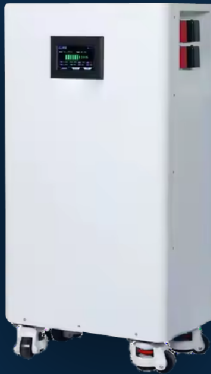
- Touch UI
- 200 A output
- Wheeled design

Wheeled Battery

Wheeled Battery

LB-25.6V 314AH Wheeled

8 kWh · 8S1P



Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery	
Nominal voltage	25.6 V
Nominal capacity	314 Ah
Nominal energy	8.04 kWh
Combination	8S1P
Display	4.3" touch screen
Bluetooth	Yes
Max. charge current	200 A
Max. discharge current	200 A
Charge cut-off V	29.2 V
Discharge cut-off V	21.6 V
Mechanical	
Battery weight	~90 kg
Battery size	620×350×700 mm
Comm.	RS485 / RS232 / CAN
Charge temp.	0 ~ +55 °C
Discharge temp.	-20 ~ +55 °C
Certification	CE61000, UN38.3, MSDS

KEY FEATURES

- 25.6V / 314Ah wheeled
- 200 A output
- Touch + Bluetooth
- Mobile design

Lead-acid Replacement

Lead-acid Replacement

LB 12.8V / 25.6V LFP

DROP-IN REPLACEMENT



KEY FEATURES

- Drop-in lead-acid replacement
- Lighter, longer life
- Maintenance-free

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

LB-12.8V 280Ah	
Voltage	12.8 V
Capacity	280 Ah
Energy	3.584 kWh
Combination	4S1P
Max. current	200 A
Charge cut-off V	14.6 V
Discharge cut-off V	10.8 V
LB-25.6V 280Ah	
Voltage	25.6 V
Capacity	280 Ah
Energy	7.168 kWh
Combination	8S1P
Max. current	100 A
Charge cut-off V	29.2 V
Discharge cut-off V	21.6 V
General	
Charging	CC/CV
Display	Optional
Charge temp.	0 ~ +55 °C
Discharge temp.	-20 ~ +55 °C

Gearfly Savior300

295Wh · 300W AC



KEY FEATURES

- Ultra-compact
- Multiple output ports
- LED flashlight

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery

Cell type	NCM 18650
Capacity	295 Wh
Cycle lifespan	800 cycles
Warranty	24 months
Operating temp.	-10~60°C discharge / 0~35°C storage

Output

AC output	110V 50/60Hz 300W (peak 500W), 2×
DC output	12V/10A, 2×
Cigarette port	12V/10A
USB-A	5V/2.4A, 2×
QC 3.0	5/9/12V
Type-C	PD up to 60W
Wireless charger	10 W

Mechanical

Input	19V/3.15A & PD 60W
Size	23×15×14 cm
Weight	3.4 kg

High-Voltage Stacked

High-Voltage Stacked

HB-M2K 11.05– 16.58 kWh

204.8–307.2V · IP65



KEY FEATURES

- HV platform for PV inverters
- IP65 inverter + battery
- Wall inverter / floor battery

The HB-M2K high-voltage storage system pairs a wall-mounted inverter with floor-standing battery modules from 11 to 16.58 kWh. IP65 rated for flexible indoor or outdoor installation, it works with mainstream high-voltage PV inverters and supports parallel expansion for growing home and light-commercial storage needs.

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery	
Model	M2K-11K / M2K-13K / M2K-16K
Cell chemistry	LFP 54Ah
Rated energy	11.05 / 13.82 / 16.58 kWh
Series-parallel	1P64S / 1P80S / 1P96S
Rated voltage	204.8 / 256 / 307.2 V
Operating voltage range	179.2~233.6 / 224~292 / 268.8~350.4 VDC
Max. continuous current	50 A
BMS communication	CAN / RS485
Dimensions (L×W×H)	727×170×1,066.5 / 1,266.5 / 1,466.5 mm
Weight	136.8 / 167.8 / 198.8 kg
General	
Safety protection	Reverse polarity, over current / voltage
IP rating	IP65 (inverter) / IP65 (battery)
Operating temperature	-25 ~ 60°C
Relative humidity	0 ~ 100%
Battery cycle life	6,000 cycles
Installation	Wall-mounted inverter + floor-standing battery
Certification	CE, RoHS, UN38.3

HB-M5K 15.36–40.96 kWh

90% DOD · IP65



KEY FEATURES

- Cost-effective HV cabinet
- Peak shaving
- Stationary or mobile

The HB-M5K is an all-in-one high-voltage battery cabinet covering 15.36 to 40.96 kWh. With 90% depth of discharge, IP65 protection and optional caster wheels, it is suited to residential backup, small commercial peak shaving and self-consumption, pairing with 100-500V high-voltage hybrid inverters.

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery	
Model	M5K-15K / 20K / 25K / 30K / 35K / 40K
Cell chemistry	LFP / 100Ah
Series-parallel	1P48S / 64S / 80S / 96S / 112S / 128S
Rated energy	15.36 / 20.48 / 25.60 / 30.72 / 35.84 / 40.96 kWh
Rated voltage	153.6 / 204.8 / 256 / 307.2 / 358.4 / 409.6 V
Operating voltage range	134.4~172.8 / 179.2~230.4 / 224~288 / 268.8~345.6 / 313.6~403.2 / 358.4~460.8 V
Max. charge/discharge current	50 A
Recommended DOD	90%
BMS communication	CAN / RS485
Mechanical & General	
Dimensions (L×W×H)	620×375×755 / 930 / 1,105 / 1,280 / 1,455 / 1,630 mm
Weight	205 / 261 / 317 / 373 / 429 / 485 kg
IP rating	IP65
Operating temperature	-20 ~ 60°C
Relative humidity	0 ~ 95% non-condensing
Altitude	<3,000 m
Cycle life	6,000 cycles
Safety protection	Over chg/dchg, high/low temp, over-current, short circuit, cell balance
Installation	Stationary / with wheels
Certification	CE, RoHS, UN38.3

RM5K 20.48–51.20 kWh

UP TO 1.6 MWh PARALLEL



KEY FEATURES

- High-capacity modular
- 8-unit parallel (1.6 MWh)
- LED + CAN

The RM5K is a modular high-voltage battery platform from 20.48 to 51.20 kWh per cabinet. Up to eight cabinets can be paralleled to reach 1.6 MWh, making it ideal for medium commercial and industrial storage, microgrids and large PV self-consumption systems.

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery	
Model	RM5K-20K / 25K / 30K / 35K / 40K / 45K / 50K
Cell capacity	LFP 100Ah
Series-parallel	1P64S / 80S / 96S / 112S / 128S / 144S / 160S
Rated energy	20.48 / 25.60 / 30.72 / 35.84 / 40.96 / 46.08 / 51.20 kWh
Rated voltage	204.8 / 256 / 307.2 / 358.4 / 409.6 / 460.8 / 512 V
Operating voltage range	179.2~230.4 / 224~288 / 268.8~345.6 / 313.6~403.2 / 358.4~460.8 / 403.2~518.4 / 448~576
Max. charge/discharge current	60 A
Recommended DOD	90%
Parallel quantity	8 units in parallel (up to 1.6 MWh)
BMS communication	CAN
Mechanical & General	
Dimensions (L×W×H)	553×503×1,011 / 1,620 / 2,230 / 2,230 / 2,230 / 2,230 / 2,230 mm
Weight	236.8 / 278 / 319.2 / 360.4 / 401.6 / 442.8 / 484 kg
Display	LED
IP rating	IP20
Operating temperature	Charge 0 ~ 55°C / Discharge -20 ~ 60°C
Relative humidity	0 ~ 95% non-condensing
Altitude	4,000 m (derating above 2,000m)
Cycle life	6,000 cycles
Safety protection	Over chg/dchg, high/low temp, over-current, short circuit
Certification	CE, RoHS, UN38.3

C&I Battery Cabinet

C&I Battery Cabinet

FRA1-96K 96 kWh

30 kVA PCS · IP55 AIR



KEY FEATURES

- Outdoor all-in-one C&I
- Dual MPPT 38.4 kW
- Touch screen
- Integrated fire suppression

The FRA1-96K is an outdoor all-in-one C&I energy storage cabinet integrating a 30 kVA PCS, 96 kWh LFP battery, dual MPPT solar input and touch-screen EMS. IP55 weatherproof with smart air cooling and built-in fire suppression, it is a plug-and-play solution for commercial peak shaving and backup power.

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery	
Cell type	LFP / 314Ah
Rated energy	96 kWh
Rated voltage	307.2 V
Battery voltage range	250 ~ 850 V
Cycle life	8,000 cycles
Max. charge/discharge	0.5P
Series-parallel	1P96S
PV & AC	
Max. PV input power	19.2 kW + 19.2 kW
Max. PV input current	32A + 32A (dual channels)
PV voltage range	250 ~ 850 V
Number of MPPT	1
Strings per MPPT	2
Rated AC power	30 kVA (grid-tied)
Rated AC current	43.5 A
Rated AC voltage	400V / 230V
Wiring	3P+N / 1P
Frequency	50Hz: 47 ~ 52 Hz
Max. efficiency	96%
Grid support	L/HVRT, active & reactive power control
Mechanical & General	
Dimensions (AIO)	L800 × W1,235 × H2,145 mm
Weight (AIO)	~950 kg
Cabinet dimensions	L730 × W1,949 × H1,235 mm
Cabinet weight	1,016.3 kg
Operating temperature	-20 ~ 50°C (derating above 45°C)
Operating humidity	0~95% RH (non-condensing)
IP rating	IP55
Anti-corrosion	C4
Cooling	Smart air cooling
Air conditioner power	2 kW (cooling) / 1 kW (heating)
Noise	≤70 dB

FRA1-241K 241 kWh

100 kW · 768V · 10 PARALLEL



KEY FEATURES

- 100 kW / 241 kWh
- Parallel up to 10 units to MWh
- THDi <3%
- Gas + water fire suppression

The FRA1-241K delivers 241 kWh storage with a 100 kW PCS in a single outdoor cabinet. Up to ten units can be paralleled to scale toward the MWh range, with bidirectional active balancing, gas and water-based fire suppression, and low THDi grid performance.

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery	
Battery type	LFP / 314Ah
Battery capacity	241 kWh
Rated battery voltage	768 V
Battery voltage range	650 ~ 876 V
Rated power	100 kW
Parallel quantity	Up to 10 units (expandable to MWh)
Mechanical & Environment	
Dimensions (W×H×D)	1200×1315×2195 mm
Net weight	2,800 kg
Operating temperature	-30 ~ 50°C (>45°C derating)
Relative humidity	0~95% RH (non-condensing)
Max. operating altitude	3,000 m
Cooling	Smart air cooling
Anti-corrosion	C4 (C5 optional)
Safety & General	
Safety protection	Bidirectional Active Balancing, Thermal Mgmt, Real-time V/T monitoring
IP rating	IP55
Communication	Modbus TCP
Safety configuration	Gas fire suppression + Water-based suppression + Ventilation
Grid/off-grid performance	THDi <3%, unbalanced-load support
Certification	IEC62619, IEC63056, IEC61000, IEC62477-1, IEC62040, UN38.3

Liquid-Cooled Cabinet

Liquid-Cooled Cabinet

FRL1 832V Liquid-Cooled

125 kW · ≥98.5% EFF



KEY FEATURES

- High-efficiency liquid cooling
- High power density 125 kW
- Non-isolated topology

The FRL1 liquid-cooled cabinet integrates a 125 kW PCS with 52.24 kWh LFP battery on an 832V bus. Over 98.5% efficiency, non-isolated topology and 10-unit off-grid parallel capability make it a compact, high-density solution for C&I and microgrid applications.

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Grid-Tied AC Output

Rated output power	125 kW
Max. apparent power	137.5 kVA
Rated AC voltage	400V / 230V
Max. output current	200 A
Rated AC frequency	50 / 60 Hz
Adjustable power factor	-1 ~ 1
Current THD	<2%
Max. efficiency	≥98.5%

Off-Grid Output

Off-grid AC voltage	400V / 230V
Off-grid frequency	50 / 60 Hz
Off-grid voltage THD	<3% (linear load)
Balanced load capability	100%
Overload capability	1.25 / 10s, 1.5 / 0.1s

Battery & Mechanical

Battery type	LFP 314Ah
Rated energy	52.24 kWh
Rated battery voltage	832 V
PCS DC voltage range	615~950V (3W+PE) / 650~950V (3W+N+PE)
Max. current	203 A
Dimensions	L1,080 × D1,586 × H2,400 mm
Net weight	2,530 kg
Operating temperature	-30 ~ 55°C
Relative humidity	0~95% RH (non-condensing)
Max. operating altitude	4,000 m (derating above 2,000m)
Cooling	Liquid cooling
IP rating	IP55
Topology	Non-isolated
Anti-corrosion	C4
Safety configuration	Gas + water fire suppression
Communication	Modbus RTU, RS485 / CAN
Max. parallel (off-grid)	10 units
Certification	IEC62619, IEC63056, IEC61000, IEC62477-1, IEC62040, UN38.3

Containerized ESS

AC1 1 MW / 2088 kWh

20FT AIR-COOLED



KEY FEATURES

- 20ft container, PCS + EMS
- MW-scale array
- Plug-and-play deployment

The AC1 is a factory-assembled 20-foot containerized ESS delivering 2,088 kWh / 1 MW. Integrated PCS, EMS, BMS, smart air cooling and fire suppression allow rapid plug-and-play deployment for utility-scale storage, renewable smoothing and microgrids.

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery System	
Cell type	LFP 314Ah
Rated energy	2,088 kWh
Rated voltage	1,533.6 V (1500V-class)
Number of cells	6,144
Series-parallel	2P52S
Rated charge/discharge power	1 MW
Charge/discharge rate	0.5C
Cycle life	8,000 cycles
General	
Rated output voltage (AC)	480 V
Container size	20 ft
BMS	Integrated, cell-level monitoring
EMS	Integrated (Modbus TCP/RTU)
Cooling	Smart air cooling
Fire protection	Aerosol / clean-agent, multi-sensor, explosion venting
Parallel quantity	Up to multiple units (MW-scale)
IP rating	IP54 (container)
Operating temperature	-20 ~ 50°C
Communication	Ethernet / 4G / RS485 / CAN, Modbus TCP/RTU
Deployment	Plug-and-play, factory assembled & tested
Certification	UN38.3, IEC62619, CE

Liquid-Cooled Container

Liquid-Cooled Container

LC1 1 MW / 2.17 MWh

LIQUID-COOLED 20FT



KEY FEATURES

- Pre-integrated 2.17 MWh
- Liquid cooling
- Grid-scale / peak shaving

The LC1 is a liquid-cooled 20-foot containerized storage system providing 2.17 MWh at 1 MW. Pre-integrated BMS, EMS and liquid cooling deliver stable, high-performance operation for grid-scale storage, peak shaving and renewable power plants.

Product Features

LiFePO4 chemistry, 6000+ cycle life, built-in BMS with CAN/RS485, IP20-IP65 rating, wall/floor/rack/mobile options, modular parallel up to 16 units, CE / UN38.3 certified.

Application Area

Home energy storage, off-grid & hybrid PV systems, backup power, commercial & industrial peak shaving, RV & mobile applications, telecom base stations.

Battery System	
Cell type	LFP 314Ah
Rated energy	2.17 MWh (2,170 kWh)
Series-parallel	1P52S
Rated power	1 MW
Cycle life	6,000 cycles
Container size	20 ft
General	
Cooling	Liquid cooling
BMS	Integrated, cell-level monitoring
EMS	Integrated EMS
Fire protection	Multi-sensor detection, fire suppression, explosion venting
IP rating	IP54 (container)
Operating temperature	-20 ~ 50°C
Communication	Ethernet / 4G / RS485 / CAN
Deployment	Factory assembled, rapid on-site deployment
Application	Grid-scale storage, renewable smoothing, microgrids, peak shaving
Certification	UN38.3, IEC62619, CE



Contact Us

Shanghai Mate Optronics Co., Ltd.

Sales Manager: Roman Xu

Phone / WeChat: +86 181 4976 3393

WhatsApp: +86 138 1684 3753

Email: mt@mateoptronics.com

Address: No.281-289 Lixin Road, Fengxian District, Shanghai, China