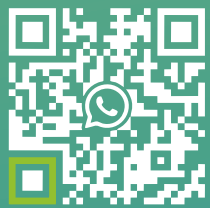


# LITHIUM BATTERY

ENERGY  
STORAGE SYSTEM



## Version 2024 English

MK ENERGY (SHENZHEN) CO., LTD.  
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**Huizhou Base:**  
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Zhongkai High-tech Zone, Huizhou, China.



# GROUP PROFILE



RESEARCH



MANUFACTURE



MARKETING

A Professional Battery  
Manufacturer,  
Established In

**2020**



The output  
Value Reached

**80+**  
million USD



Exported  
Countries

**60+**



**200+**  
Employees

**20+**  
R&D Engineers



Annual Output

**800+**  
MWh

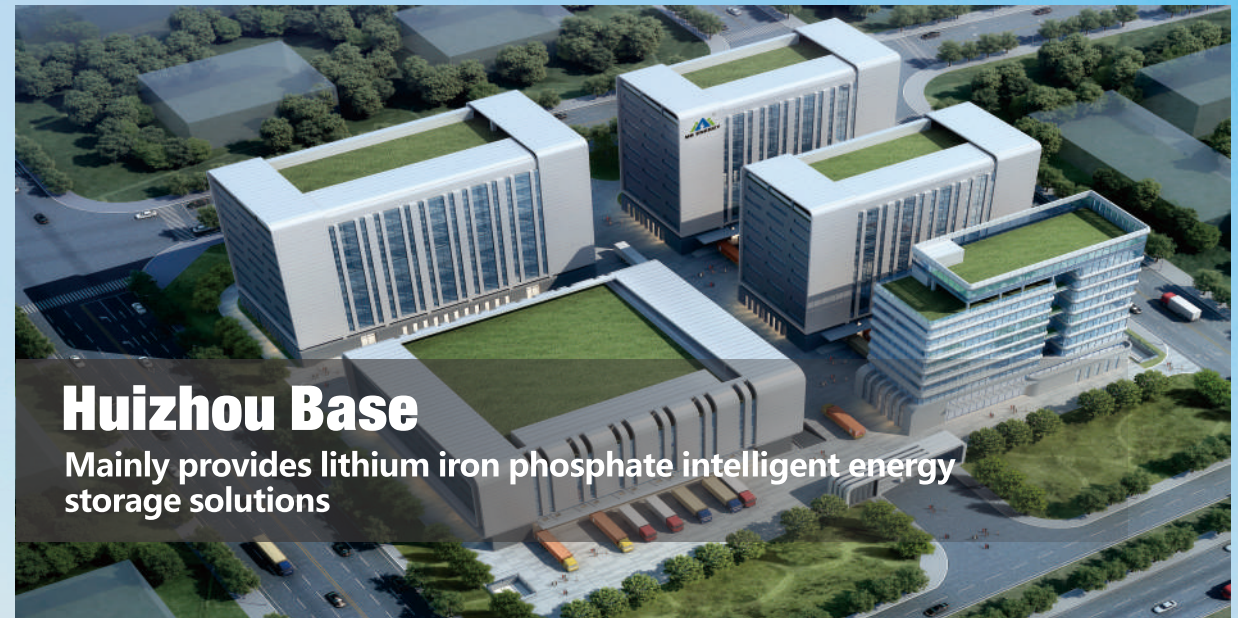


**1** Production  
Base

**1** Sales  
Center



## 1 Production Base



### Huizhou Base

Mainly provides lithium iron phosphate intelligent energy storage solutions

## 1 Sales Center



### MK Energy (SHENZHEN) CO.,LTD.

Mainly provide sales, after-sales and other support services for global customers





# Wall Mounted LiFePO4 Battery



SHORT-CIRCUIT



STATIC ELECTRICITY



FLAME RETARDANT



TEMPERATURE CONTROL



# RV&Marine LiFePO4 Battery



SHORT-CIRCUIT



STATIC ELECTRICITY



FLAME RETARDANT



TEMPERATURE CONTROL

## System Parameter



### Technology: Lithium Iron Phosphate (LiFePO4)

Voltage: 25.6V - 48V - 51.2V

Capacity: 50Ah to 300Ah

Cycle life: ≥ 6000 times

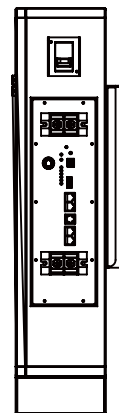
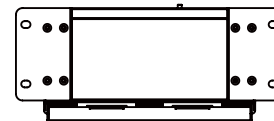
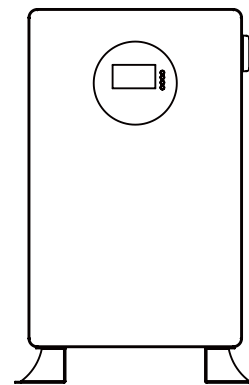
Operation temp: -20°C~ 60°C

### Application

Solar system

Telecom

Other energy storage areas



### Wall Mounted LiFePO4 Battery

Model	Nominal voltage (V)	Capacity (Ah)	Dimension(MM)		
			Length	Width	Height
LFP24-200	25.6	200	600	420	210
LFP48-100	48	100	600	420	210
LFP48-200	48	200	860	540	160
LFP51.2-100	51.2	100	600	420	210
LFP51.2-120	51.2	120	600	420	210
LFP51.2-150	51.2	150	860	540	160
LFP51.2-200	51.2	200	860	540	160
LFP51.2-250	51.2	250	860	620	200

## System Parameter



### Technology: Lithium Iron Phosphate (LiFePO4)

Voltage: 12.8V - 25.6V

Capacity: 6Ah to 400Ah

Cycle life: ≥ 6000 times

Operation temp: -20°C~ 60°C

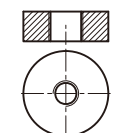
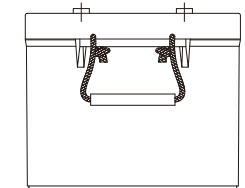
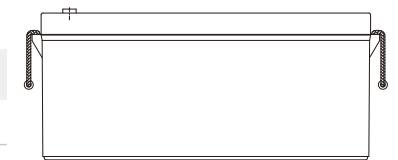
### Application

Solar system

UPS system

Telecom

Other energy storage areas



### RV&Marine LiFePO4 Battery

Model	Voltage (V)	Capacity (Ah)	Dimension(MM)		
			Length	Width	Height
LFP12-6	12.8	6	151	65	100
LFP12-12	12.8	12	150	95	103
LFP12-18	12.8	18	180	77	168
LFP12-24	12.8	24	166	175	125
LFP12-30	12.8	30	166	175	125
LFP12-50	12.8	50	229	138	210
LFP12-60	12.8	60	229	138	210
LFP12-80	12.8	80	260	168	210
LFP12-100	12.8	100	330	175	225
LFP12-120	12.8	120	330	175	225
LFP12-150	12.8	150	483	170	240
LFP12-200	12.8	200	522	240	225
LFP12-250	12.8	250	522	268	225
LFP12-300	12.8	300	522	268	225
LFP12-400	12.8	400	522	268	225
LFP25.6-50	25.6	50	330	175	225
LFP25.6-100	25.6	100	522	240	225
LFP25.6-150	25.6	150	522	268	225
LFP25.6-200	25.6	200	522	268	225



# Rack Mounted LiFePO4 Battery

- SHORT-CIRCUIT
- STATIC ELECTRICITY
- FLAME RETARDANT
- TEMPERATURE CONTROL



# Stackable LiFePO4 Battery

- SHORT-CIRCUIT
- STATIC ELECTRICITY
- FLAME RETARDANT
- TEMPERATURE CONTROL

## System Parameter

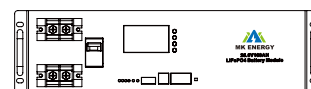
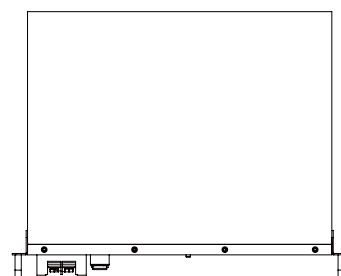
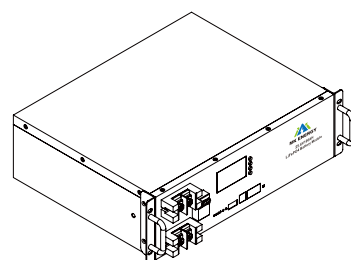


### Technology: Lithium Iron Phosphate (LiFePO4)

- Voltage: 25.6V - 48V - 51.2V
- Capacity: 50Ah to 300Ah
- Cycle life: ≥ 6000 times
- Operation temp: -20°C~ 60°C

### Application

- Data Center
- Telecom
- Solar System



### Rack Mounted LiFePO4 Battery

Model	Case	Voltage (V)	Capacity (Ah)	Dimension(MM)				
				L1	L2	W1	W2	H
LFP25.6-100	3U	25.6	100	442	482	350	350	133
LFP48-50	3U	48	50	442	482	350	350	133
LFP48-100	3U	48	100	442	482	400	396	133
LFP48-100	4U	48	100	442	482	480	520	177
LFP48-150	6U	48	150	442	482	500	500	280
LFP48-200	6U	48	150	442	482	500	500	280
LFP48-250	6U	48	250	442	482	570	570	280
LFP48-300	6U	48	300	442	482	570	570	280
LFP51.2-50	3U	51.2	50	442	482	350	350	133
LFP51.2-100	3U	51.2	100	442	482	480	520	133
LFP51.2-100	4U	48	100	442	482	480	520	177
LFP51.2-150	6U	51.2	150	442	482	500	500	270
LFP51.2-200	6U	51.2	200	442	482	500	500	280
LFP51.2-250	6U	51.2	250	442	482	570	570	280
LFP51.2-300	6U	51.2	300	442	482	570	570	280

## System Parameter



### Technology: Lithium Iron Phosphate (LiFePO4)

- Voltage: 25.6V - 51.2V
- Capacity: 100Ah to 400Ah
- Cycle life: ≥ 6000 times
- Operation temp: -20°C~ 65°C

### Application

- Lighting TV, PC
- Phone Charging Refrigerator
- Air-conditioner Security system
- Washing machine Emergency system

### Stackable LiFePO4 Battery

Model	2560Wh	5120Wh	10240Wh	15360Wh	20480Wh
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### Battery

Model	25.6V100Ah	51.2V100Ah	51.2V200Ah	51.2V300Ah	51.2V400Ah
Voltage	25.6V	51.2V			
Capacity	100Ah		200Ah	300Ah	400Ah
Energy	2.56kwh	5.12kwh	10.24kwh	15.36kwh	20.48Kwh
Design life	16years				

### Inverter

Optional

### Display

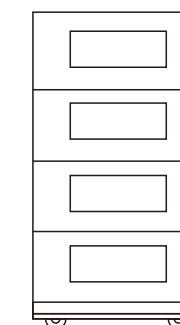
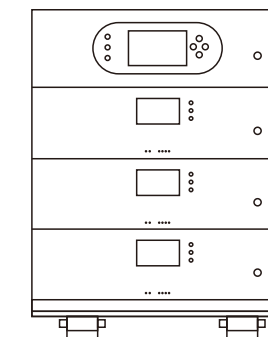
LCD+LED

### Communication interface

RS485/RS232/CAN

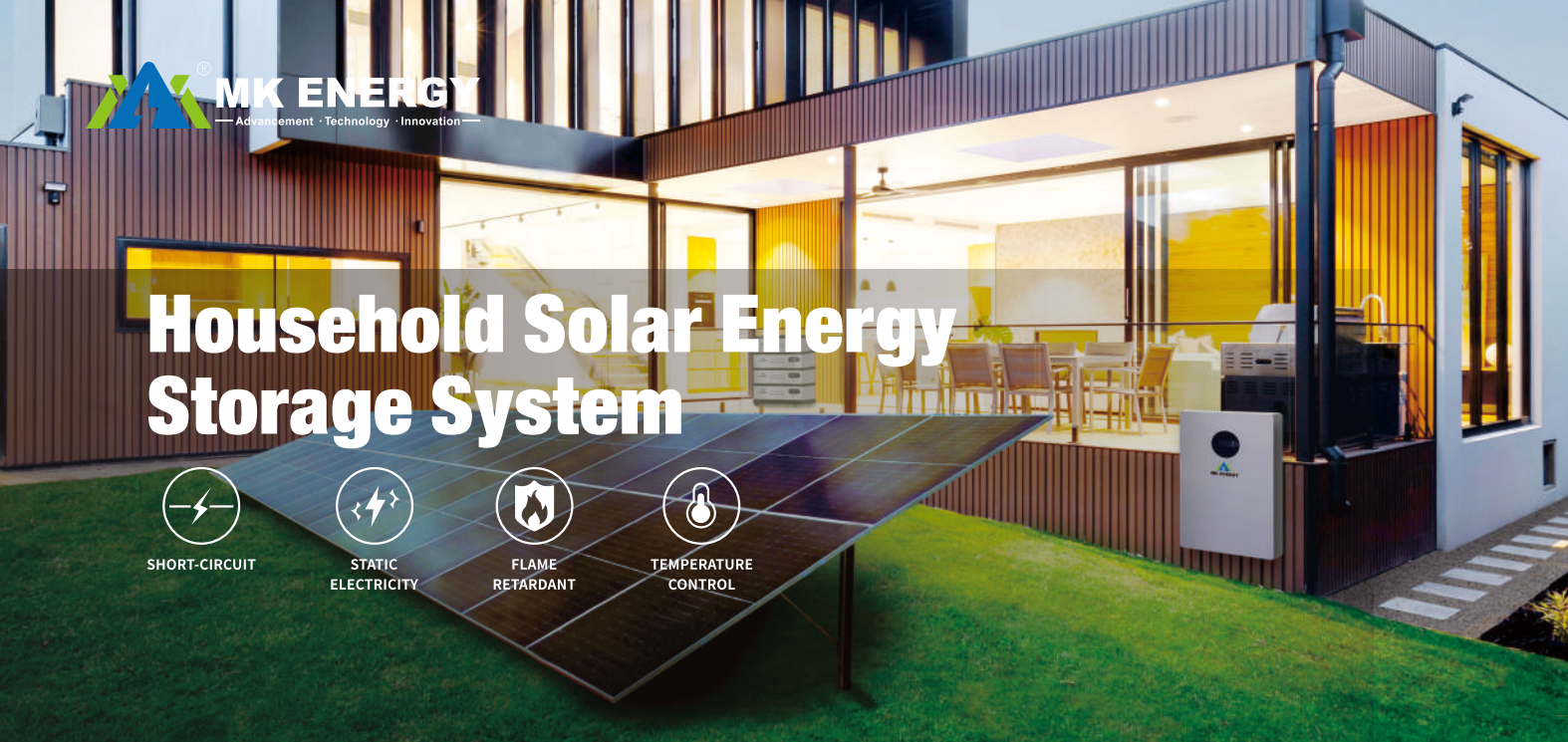
### Temperature range

-20~65°C





# Household Solar Energy Storage System



# Industrial / Commercial Energy Storage System



## System Parameter



### Technology: Lithium Iron Phosphate (LiFePO4)

Voltage: 25.6V - 51.2V

Capacity: 100Ah to 300Ah

Cycle life: ≥ 6000 times

Operation temp: -20°C ~ 65°C

### Application

Lighting	TV, PC
Phone Charging	Refrigerator
Air-conditioner	Security system
Washing machine	Emergency system

### Household Solar Energy Storage System

Model	2560Wh	5120Wh	10240Wh	15360Wh
-------	--------	--------	---------	---------

### Battery

Model	25.6V100Ah	51.2V100Ah	51.2V200Ah	51.2V300Ah
Voltage	25.6V		51.2V	
Capacity		100Ah	200Ah	300Ah
Energy	2.56kwh	5.12kwh	10.24kwh	15.36kwh
Design life	20 years			

### Solar Panel

Model	450W/550W			
QTY	2pcs	3pcs	6pcs	8pcs

### Inverter

Model	3000W/24V	5500W/48V
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### Display

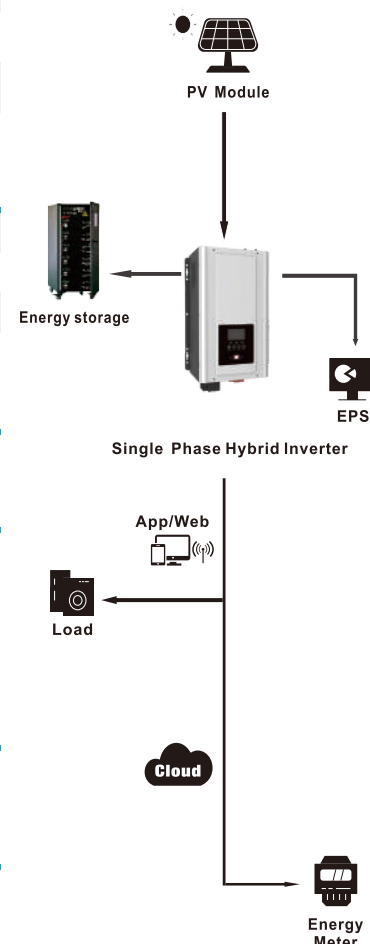
LCD+LED

### Communication Interface

RS485/RS232/CAN

### Temperature Range

-20~65°C



Solar Energy Storage System

## System Parameter



### Technology: Lithium Iron Phosphate (LiFePO4)

Voltage: 614.4V~1228.8V

Capacity: 50kwh~100Mwh

Cycle life: ≥ 6000 times

Operation temp: -20°C ~ 60°C

### Application

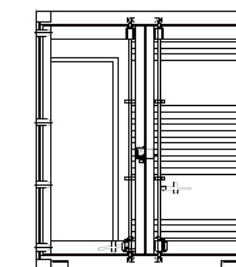
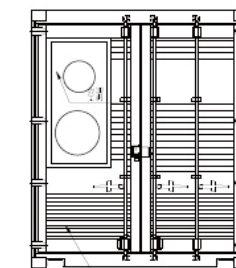
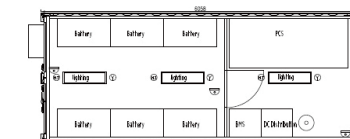
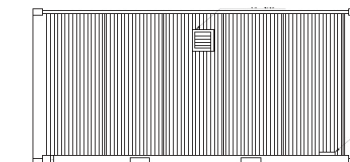
- EMS system
- LCD
- Interchanger
- Monitoring software

### Industrial / Commercial Energy Storage System

Model	200Kwh	500Kwh	1Mwh	5Mwh	10Mwh
-------	--------	--------	------	------	-------

### Battery

Model	51.2V280Ah				76.8V280Ah
Series	14pcs	12pcs*3 cluster	12pcs*6 cluster	15pcs*24 cluster	16pcs*15 cluster
Voltage	716.8V	614.4V		768V	1228.8V
Capacity	280Ah				
Energy	200.704kwh	516.096kwh	1032.192kwh	5160.96kwh	10321.92kwh
Container dimension	3030mm*2438mm *2590mm (L*W*H)		6060mm*2438mm *2590mm (L*W*H) 20ft HQ container	12192mm*2438mm *2896mm (L*W*H) 40ft HQ container	1*20ft HQ +1*40ft HQ
High voltage case	DC1000V200A switch, DC fuse, splitter, power, etc.				DC1000V300A switch, DC fuse, splitter, power, etc.
BMU	16S*3.2V lithium battery				24S*3.2V lithium battery
Power Control System(PCS)	100KW	500KW	630KW	1250KW	
Industrial air conditioning	220VAC 1500W		220VAC 1500W		
Design life	16 years				





# Forklift Lithium Battery



SHORT-CIRCUIT



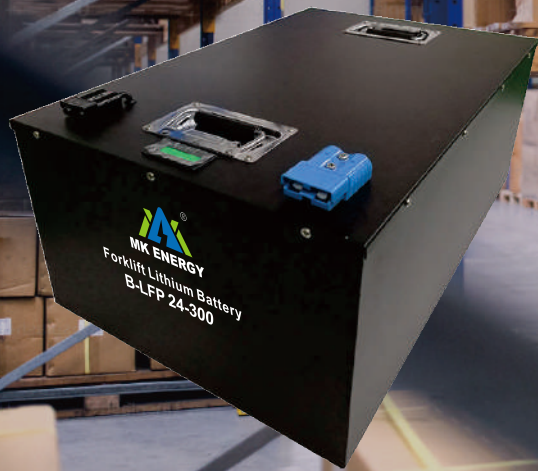
STATIC ELECTRICITY



FLAME RETARDANT



TEMPERATURE CONTROL



## System Parameter

**Technology: Lithium Iron Phosphate (LiFePO4)**

Voltage: 24V - 36V - 48V - 80V

Capacity: 100Ah to 840Ah

Cycle life: ≥ 6000 times

Operation temp: -20°C~ 60°C

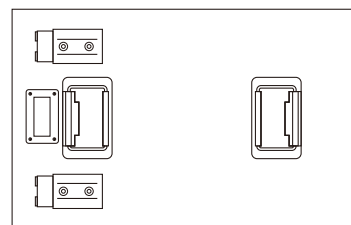
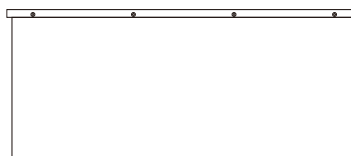
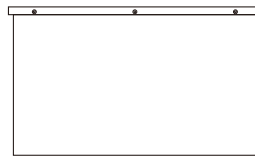
### Application

Forklift

### Forklift LiFePO4 Battery

Nominal Voltage	Lead Acid Equivalent	Series Number	Actual Capacity		Battery Dimensions (LxWxH)		Weight	
			[Wh]	[Ah]	[in]	[mm]	[lbs]	[kg]
24	12-85-5	B-LFP 24-100	2560	100	24.6x 8.1x24.7	624x 207x627	467	212
	12-85-13	B-LFP 24-230	5957	230	24.6x 11.2x24.7	624x 284x627	635	288
	12-125-13	B-LFP 24-300	7680	300	24.6x 11.2x24.7	624x 284x627	635	288
	12-125-15	B-LFP 24-560	14336	560	24.6x 16.9x24.7	624x 428x627	959	435
	12-125-17	B-LFP 24-675	17280	675	24.6x 13.5x24.7	965x 343x777	1624	727
36	12-125-11	B-LFP 36-300	11520	300	24.6x 13.6x24.7	960x 345x777	1640	744
	12-125-13	B-LFP 36-460	17664	460	24.6x 13.3x24.7	965x 337x775	1649	748
	12-125-15	B-LFP 36-560	21504	560	24.6x 18.1x24.7	978x 461x772	2597	1178
	12-125-17	B-LFP 36-615	23616	615	24.6x 27.1x24.7	978x 689x575	2002	908
48	12-125-13	B-LFP 36-690	26496	690	24.6x 20.2x24.7	973x 512x775	2597	1178
	24-125-13	B-LFP 48-300	15360	300	32.7x 20.6x24.7	830x 522x627	1561	708
	24-85-17	B-LFP 48-460	23552	460	32.7x 20.6x24.7	830x 522x627	1561	708
80	24-85-19	B-LFP 48-540	27648	540	32.7x 24.8x24.7	830x 630x627	1887	856
	40-125-11	B-LFP 80-280	23296	280	40.4x 22.2x24.7	1026x 564x627	2127	965

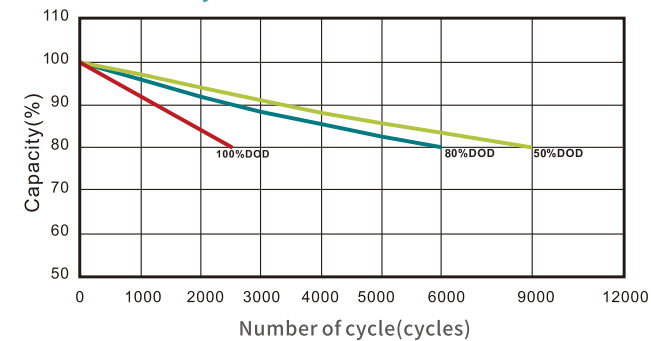
FC IEC CE



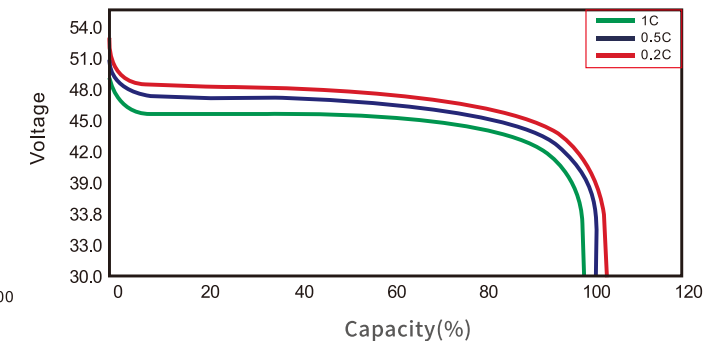
## Performance Diagrams

### Number of Cycles Vs. DOD

Cycle life with DOD at 25°C, 0.2C

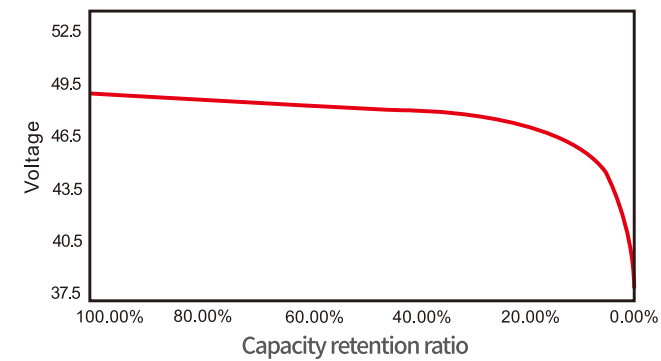


### Discharge Performance at R.T.

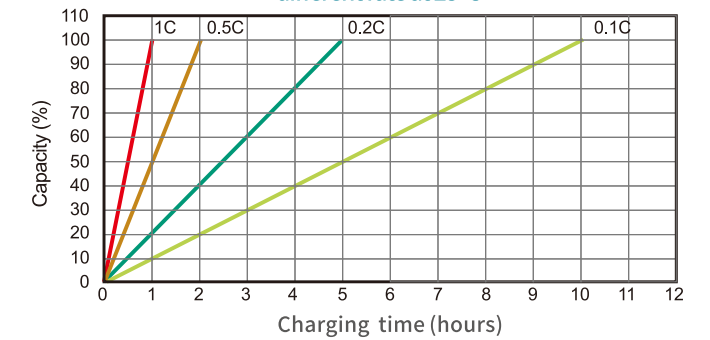


### Battery Capacity (C) VS. Open Circuit Voltage (OCV) Battery Capacity Vs. Charging Time

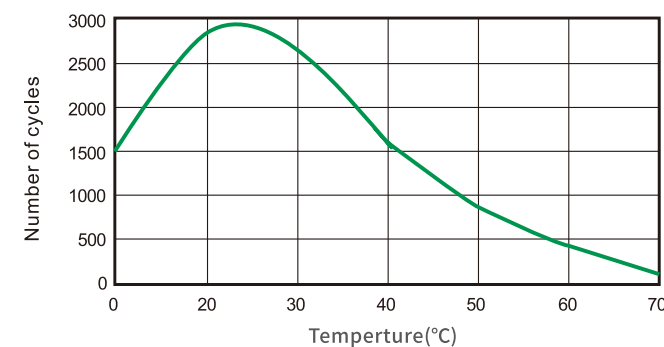
SOC Vs OCV



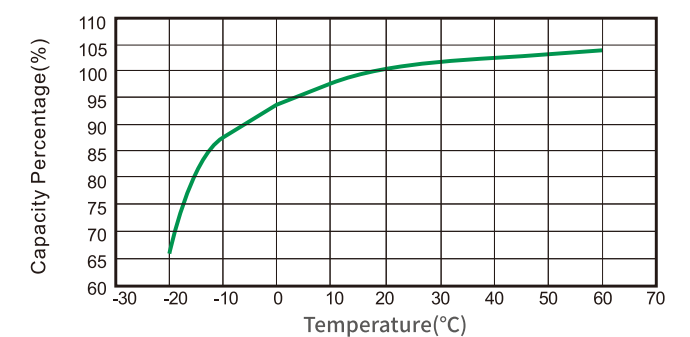
Charging capacity (%) VS time with different rate at 25°C



### Cycle Life in Relation to Temperature



### Temperature Effects on Capacity



Overload protection



Temperature protection



Short circuit protection



Battery protection



The overcharge protection



Overdischarge



Over current protection



Over voltage protection