KAGE®
ENERGY SOLUTION

GUANGZHOU KAIJIE POWER SUPPLY INDUSTRIAL CO.,LTD

TEL:+86-20-6631 3366 FAX:+86-20-36809945 ZIP CODE:510800

Address: 9F of Building A,Jingshi Square,No.179 Yingbin Road,

Xinhua,510800,Huadu,Guangzhou,China

www.kagebatteries.com

www.kagesolution.com

LITHIUM BATTERY SOLUTION

SHAOGUAN

GUANGZHOU

COMPANY OVERVIEW

Kage Group was established in 1996, specializes in research, development, manufacturing and engineering from the ground up by a team of battery experts for all kinds of batteries. Our products have been exported to more than 100 countries or regions together with other famous OEM brands in the industry.

Kage Lithium Battery is built to meet the power and energy requirements in UPS, Inverters, Solar / Hybrid Powered Systems, golf carts, utility vehicles, AGVs and LSVs.

ISO 14001:2004 · OHSAS 18001:2007 · ISO 9001:2008 · MSDS · INMETRO · CE

UN38.3

KAGE lithium battery features all the benefits of lithium batteries - longer life, no maintenance, faster charging -with even more intelligent features built-in. From its superior battery design, KAGE Lithium batteries offer exclusive advantages you won't find in competitive products.

Our mission is to provide cleaner and more efficient energy solutions for humanity through innovative lithium battery technology. Our vision is to become the world's leading lithium battery supplier, spearheading industry development and contributing to a sustainable future.

Large Scale Automated Production Line

Kage has the experience and expertise in large –scale lithium batteries manufacturing, renown for long –term stable product delivery.

The company lithium battery production line has achieved high degree of automation and intelligence.

With the implementation of new EMS intelligent system and integrating data acquisition channels (RFID, PLS, IPC, PC, etc) we can ensure real-time, accurate and comprehensive collection of data.

Multi- Dimensional protection of product stability, and consistency of service, ensures our customers to attain a safe, efficient and reliable energy storage solutions.

Test Centre

Since our establishment, KAGE testing & verification centre has been operating strictly in accordance with the requirement of CNAS.

We utilize industry leading testing & verification equipment, coupled with competent testing teams to ensure all of our lithium products quality and safety standards are met.

KAGE company's products and services are focused on:

- ★ Energy storage systems
- ★ Backup power supplies
- ★ Power battery supplies
- ★ One-Stop power solutions

100+
R&D Staffs

20+
Years of Industrial Experience

3
R&D Centers

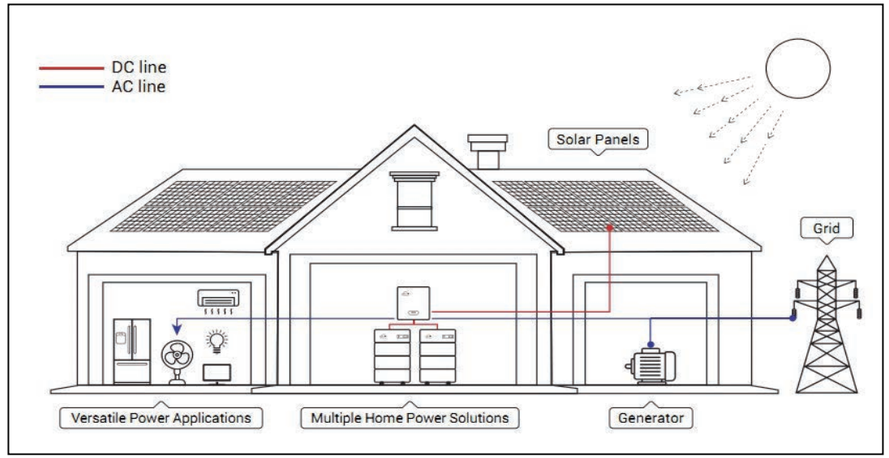
2+
GWH production Capacity

60+
Certications

300+
Patents

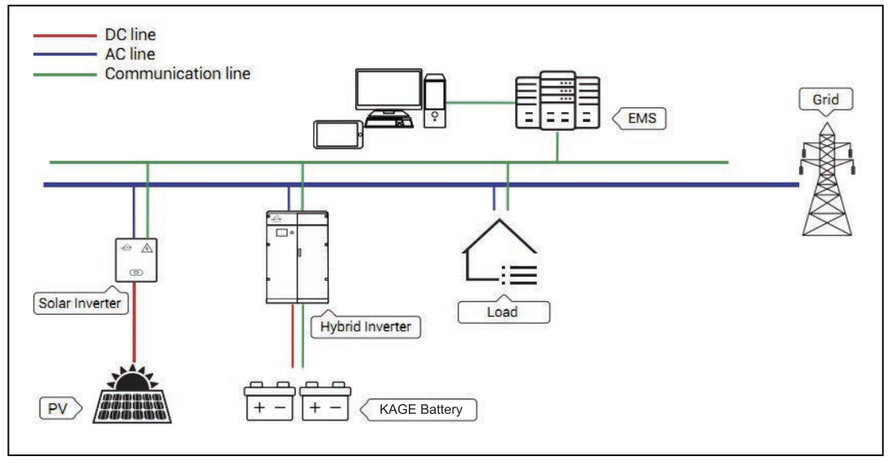
Residential Solar Power Storage Solution

With the deepening of the low-carbon concept and the improvement of the economic benefits of energy storage; home energy storage systems are increasingly widely used. Based on a thorough understanding of market and industry trends, KAGE has developed household energy storage products that can flexibly adapt to multiple scenarios, making it easier and more efficient for users to use electricity.



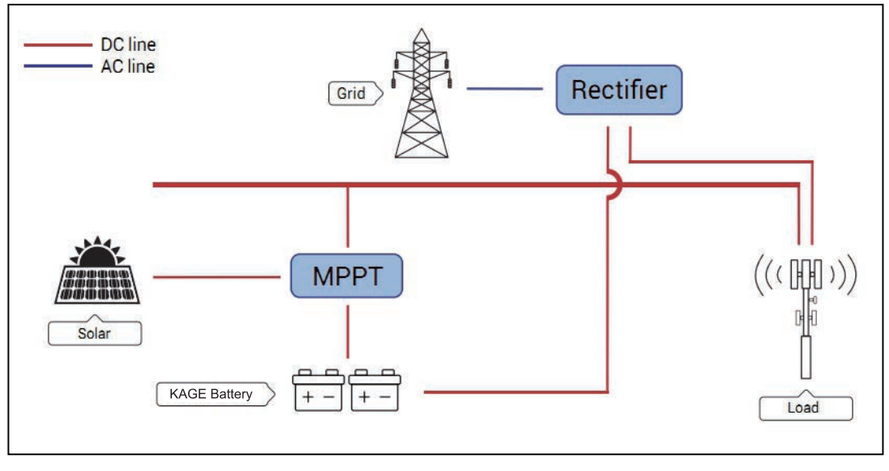
Industrial & Commercial Energy Storage Solution

In the field of industrial and commercial energy storage, KAGE can provide modular products and more integrated container energy storage systems, flexibly adapting to customer needs. The system is characterized by convenient installation, safety, and efficiency, which can significantly improve the return on investment of customers.

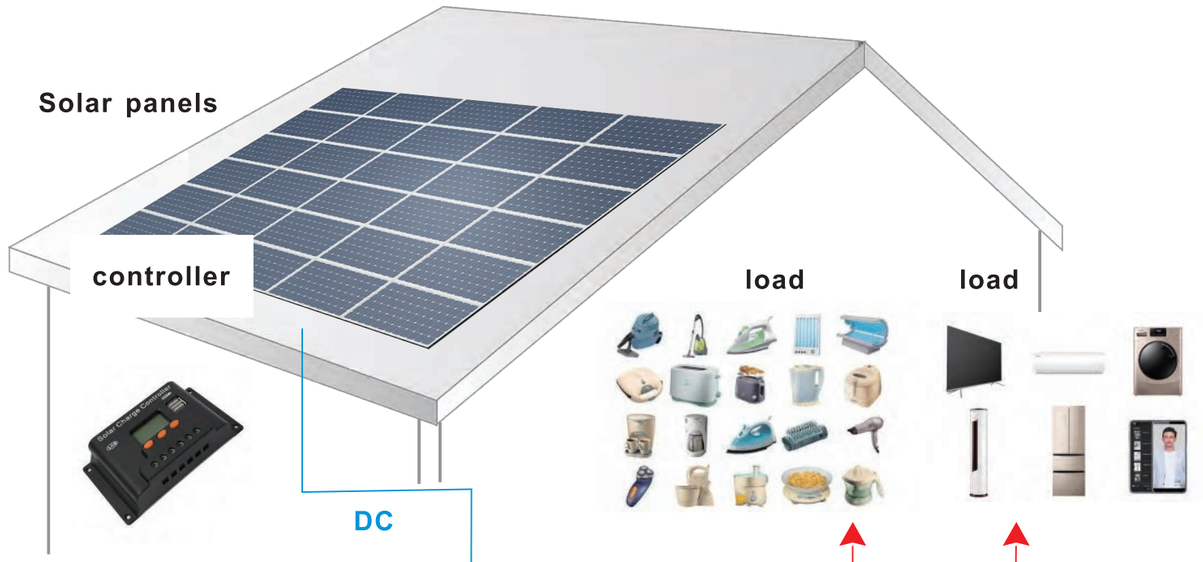


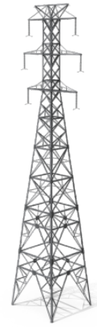
Telecom / Connectivity Power Storage Solution

KAGE manufactures a wide range of Lithium Network Power Batteries to Cater to any telecommunications / connectivity. Aiming to deliver an unprecedented value to your needs, these solutions offer exceptional performance, long life, high energy density, ease of installation, and hassle-free operation for a broad spectrum of telecom services applications.



Residential Solar Power Storage Solution





watt-hour meter

Lithium battery pack

DC

inverter

AC AC

▲Various capacity specifications can be customized according to customer needs.

Product Features

- Up to 16 groups of parallel connections, flexible capacity expansion
- Compatible with mainstream inverters in the market, providing more options
- LED display for voltage, current, temperature, convenient for users to query
- Built-in BMS provides multiple protection functions

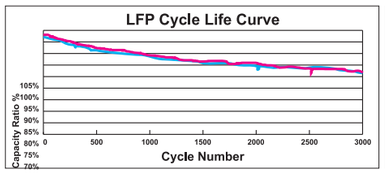
Application scenario

House · Farm · Telecom · Countryside · Island · Pasture

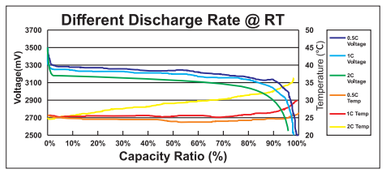
SPECIFICATIONS

Model No.		KAGE-WM-51100/51200/51300
Dimensions	Length	580mm
	Width	370/510mm
	Height	156mm
Weight		About40kg
Nominal Voltage		51.2V
Nominal Capacity		100Ah
Nominal Energy		5120Wh
Internal Impedance		≤ 100mΩ
Cycle life		≥6000 times(80% DOD)
Charge Voltage		58.4V
Discharge Cut-off Voltage		40V
Standard Charge Current		20A
Max. Charge Current		100A
Standard Discharge Current		20A
Max. Discharge Current		100A
Peak Discharge Current		200A<5S
Operating Temperature		Charge 0°C ~ +45°C
		Discharge -20°C ~ +60°C

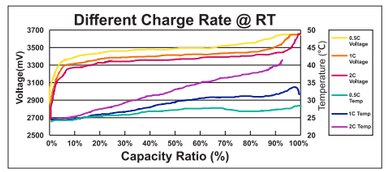
Electrical performance of product



Curve of cycle life



Curve of different discharge rate



Curve of different charge rate

KAGE ENERGY SOLUTION®

Ⓡ INVERTER MODE Ⓖ PV MODE Ⓑ UTILITY MODE

Home Energy Storage
(Stackable system)

High Efficiency

Easy installation

Safe and Reliable

Perfect Compatibility

Product Features

- Scalable from 10 kWh to 50 kWh
- Self-Consumption Optimization
- Integrated with inverter to avoid the compatibility problem
- LFP battery, safest and long cycle life
- Stackable design,effortless installation
- High-Powered Emergency-Backup and Off-Grid Function

SPECIFICATIONS

Models	KAGE-SB-48S			
BATTERY				
Battery Type	LiFePO4			
Nominal Voltage	51.2			
Nominal Capacity	400Ah	600Ah	800Ah	1000Ah
Nominal Energy	20KWh	30KWh	40KWh	50KWh
Weight	190Kg	262Kg	334Kg	406Kg
Dimension L*D*H(mm)	630*660*600	800*660*600	980*660*600	1150*660*600
Cycle life	≥6000 times(80% DOD)			
Charge Voltage	58.4V			
Discharge Cut-off Voltage	40V			
Standard Charge Current	20A			
Max. Charge Current	100A			
Standard Discharge Current	20A			
Max. Discharge Current	100A			
INVERTER OUTPUT				
Rated Output Power	10000W			
Max.Peak Power	20,000W			
Rated Output Voltage	230V			
Rated AC Frequency	50Hz/60Hz			
PV INPUT				
Num. of MPPT Trackers	2			
Max.PV Array Power	5,500W+5500W			
Max.Input Current	22A+22A			
Max.Voltage of Open Circuit	500Vdc+500Vdc			
MPPT Voltage Range	125~425Vdc			
Max.MPPT Charging Current	200A			
Max.Mains/Generator Charging Current	120A			
Max.Hybrid Charging Current	200A			
EFFICIENCY				
MPPT Tracking Efficiency	99.90%			
Max. Battery Inverter Efficiency	92.00%			
GENERAL				
Protection Degree	IP20			
Operating Temperature Range	-10°C ~ 55°C			

Home Energy Storage
(Vertical system)

High Efficiency

Easy installation

Safe and Reliable

Perfect Compatibility

Product Features

- Scalable from 10 kWh to 50 kWh
- Self-Consumption Optimization
- Integrated with inverter to avoid the compatibility problem
- LFP battery, safest and long cycle life
- Stackable design,effortlessly installation
- Capable of High-Powered Emergency-Backup and Off-Grid Function

SPECIFICATIONS

Models	KAGE-VESS-48S	
BATTERY		
Battery Type	LiFePO4	
Nominal Voltage	51.2	
Nominal Capacity	100Ah	200Ah
Nominal Energy	5120Wh	10240Wh
Weight	85Kg	140Kg
Dimension L*D*H(mm)	1190*600*184	1800*600*184
Cycle life	≥6000 times(80% DOD)	
Charge Voltage	58.4V	
Discharge Cut-off Voltage	40V	
Standard Charge Current	20A	
Max. Charge Current	100A	
Standard Discharge Current	20A	
Max. Discharge Current	100A	
INVERTER OUTPUT		
Rated Output Power	5000W	
Max.Peak Power	10,000W	
Rated Output Voltage	230V	
Rated AC Frequency	50Hz/60Hz	
PV INPUT		
Num. of MPPT Trackers	1	
Max.PV Array Power	5,500W	
Max.Input Current	22A	
Max.Voltage of Open Circuit	500Vdc	
MPPT Voltage Range	125~450Vdc	
Max.MPPT Charging Current	80A	
Max.Mains/Generator Charging Current	60A	
Max.Hybrid Charging Current	80A	
EFFICIENCY		
MPPT Tracking Efficiency	99.90%	
Max. Battery Inverter Efficiency	92.00%	
GENERAL		
Protection Degree	IP20	
Operating Temperature Range	-10℃~55℃	

KAGE ENERGY SOLUTION®

Ⓡ INVERTER MODE Ⓖ PV MODE Ⓑ UTILITY MODE

Home Energy Storage
(Plastic shell battery)

SPECIFICATIONS

- **Longer Cycle Life:** Offers up to 20 times longer cycle life and five times longer float/calendar life than lead acid battery, helping to minimize replacement cost and reduce total cost of ownership.
- **Lighter Weight:** About 40% of the weight of a comparable lead acid battery. A 'drop in' replacement for lead acid batteries.
- **Higher Power:** Delivers twice power of lead acid battery, even high discharge rate, while maintaining high energy capacity.
- **Wider Temperature Range:** -20°C~60°C.
- **Superior Safety:** Lithium Iron Phosphate chemistry eliminates the risk of explosion or combustion due to high impact, overcharging or short circuit situation.
- **Increased Flexibility:** Modular design enables deployment of up to four batteries in series and up to ten batteries in parallel.

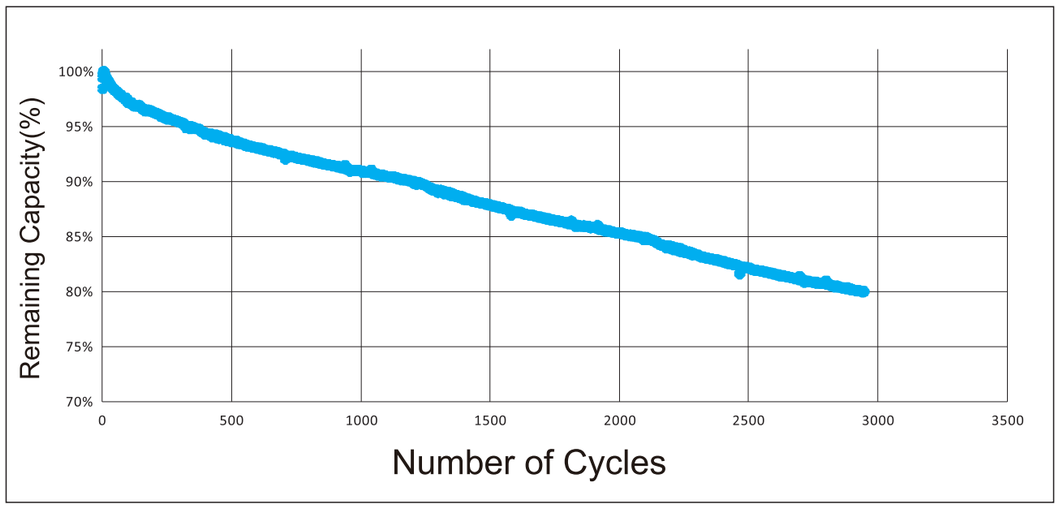
Application :

- Electric vehicles, electric mobility
- Solar/wind energy storage system
- UPS, backup power
- Telecommunication
- Medical equipment
- Lighting

SPECIFICATIONS

Model No.		KAGE-PS-12100	KAGE-PS-24100
Dimensions	Length	330mm	522mm
	Width	173mm	239mm
	Height	216mm	218mm
Weight		About12kg	About22kg
Nominal Voltage		12.8V	25.6V
Nominal Capacity		100Ah	100Ah
Nominal Energy		1280Wh	2560Wh
Internal Impedance		≤ 20mΩ	≤ 20mΩ
Charge Voltage		14.6V	29.2V
Discharge Cut-off Voltage		10V	20V
Standard Charge Current			20A
Max. Charge Current			100A
Standard Discharge Current			20A
Max. Discharge Current			100A
Peak Discharge Current			200A<5S
Operating Temperature			Charge 0°C ~ +45°C
			Discharge -20°C ~ +60°C

Cycle Life Curve



KAGE ENERGY SOLUTION

R INVERTER MODE G PV MODE B UTILITY MODE

Home Energy Storage
(Rack Mounted Battery)

High Energy Density

Easy To Install And Upgrade

Remote Control And Diagnosis

8 Years Life Time Design

Product Features

More reliable and safety
- Support gyroscope anti-theft and GPS anti-theft

Advanced monitoring control
- Optimized monitoring strategy through remote control and diagnosis

Easy operation
- Friendly human-machine interface for easy operation

More compatible to monitoring system
- Support RS232 and RS485 and CAN communication to be connected to the power environment monitoring system

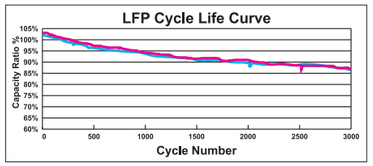
Wide working temperature
- Excellent high-temperature performance with a working environment temperature of -20-60 Celsius degrees

SPECIFICATIONS

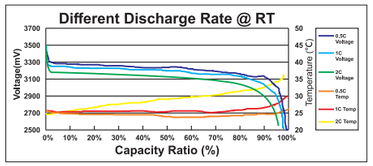
Model No.		KAGE-RM-48100/48150/48200
Dimensions	Length	482mm
	Width	420mm
	Height	3U/4U/4.5U
Weight		About50-90kg
Nominal Voltage		51.2V
Nominal Capacity		100Ah
Nominal Energy		5120/7680/10240Wh
Internal Impedance		≤ 100mΩ
Charge Voltage		58.4V
Discharge Cut-off Voltage		40V
Standard Charge Current		20A
Max. Charge Current		100A
Standard Discharge Current		20A
Max. Discharge Current		100A
Peak Discharge Current		200A<5S
Operating Temperature		Charge 0°C ~ +45°C
		Discharge -20°C ~ +60°C

Note: Max. 16 parallel connection

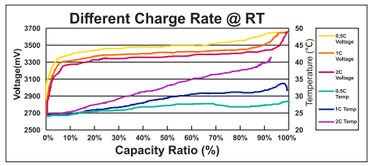
Electrical performance of product



Curve of cycle life



Curve of different discharge rate



Curve of different charge rate

4G/5G
Communications

KAGE advanced battery solutions provide reliable backup power, maintaining 4G/5G communication and different connectivity services; (VSAT, P2P) to ensure continual critical data transmission.

These batteries offer extended run times and energy efficiency, enhancing network reliability, reducing operational costs, and minimizing environmental impact. A high-quality battery backup system ensures constant connectivity and supports continuous communication services, essential for both daily operations and emergencies.

KAGE ENERGY SOLUTION

R INVERTER MODE G PV MODE B UTILITY MODE

Communication Lithium Battery

High Energy Density

Easy To Install And Upgrade

Remote Control And Diagnosis

8 Years Life Time Design

Product Features

More reliable and safety
- Support gyroscope anti-theft and GPS anti-theft

Advanced monitoring control
- Optimized monitoring strategy through remote control and diagnosis

Easy operation
- Friendly human-machine interface for easy operation

More compatible to monitoring system
- Support RS232 and RS485 and CAN communication to be connected to the power environment monitoring system

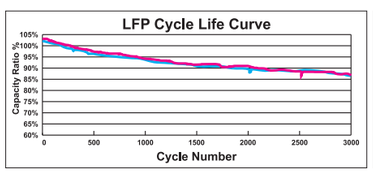
Wide working temperature
- Excellent high-temperature performance with a working environment temperature of -20-60 Celsius degrees

SPECIFICATIONS

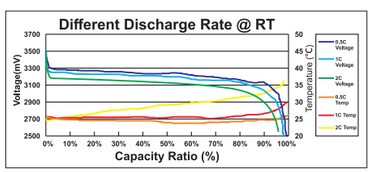
Model No.		KAGE-RM-48100/48150/48200
Dimensions	Length	482mm
	Width	420mm
	Height	3U/4U/4.5U
Weight		About50-90kg
Nominal Voltage		51.2V
Nominal Capacity		100Ah
Nominal Energy		5120/7680/10240Wh
Internal Impedance		≤ 100mΩ
Charge Voltage		58.4V
Discharge Cut-off Voltage		40V
Standard Charge Current		20A
Max. Charge Current		100A
Standard Discharge Current		20A
Max. Discharge Current		100A
Peak Discharge Current		200A<5S
Operating Temperature		Charge 0°C ~ +45°C
		Discharge -20°C ~ +60°C

Note: Max. 16 parallel connection

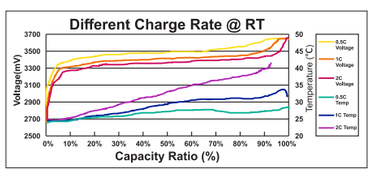
Electrical performance of product



Curve of cycle life



Curve of different discharge rate



Curve of different charge rate

MPS Microgrid Series

Microgrid Hybrid Inverter

Industrial Energy Solution (Power Cabinet)

Photovoltaic Energy Storage

Wind Power Energy Storage

Industrial And Commercial Application

Rural Areas Without Electricity

Product Features

More reliable and safety
- All in one design, high integration
- Compact size, high power density

Optimal algorithm
- Optimal Compatibility Design of PCS and cell cluster voltages
- On-demand deployment with automatic peak-load and valley-filling operation

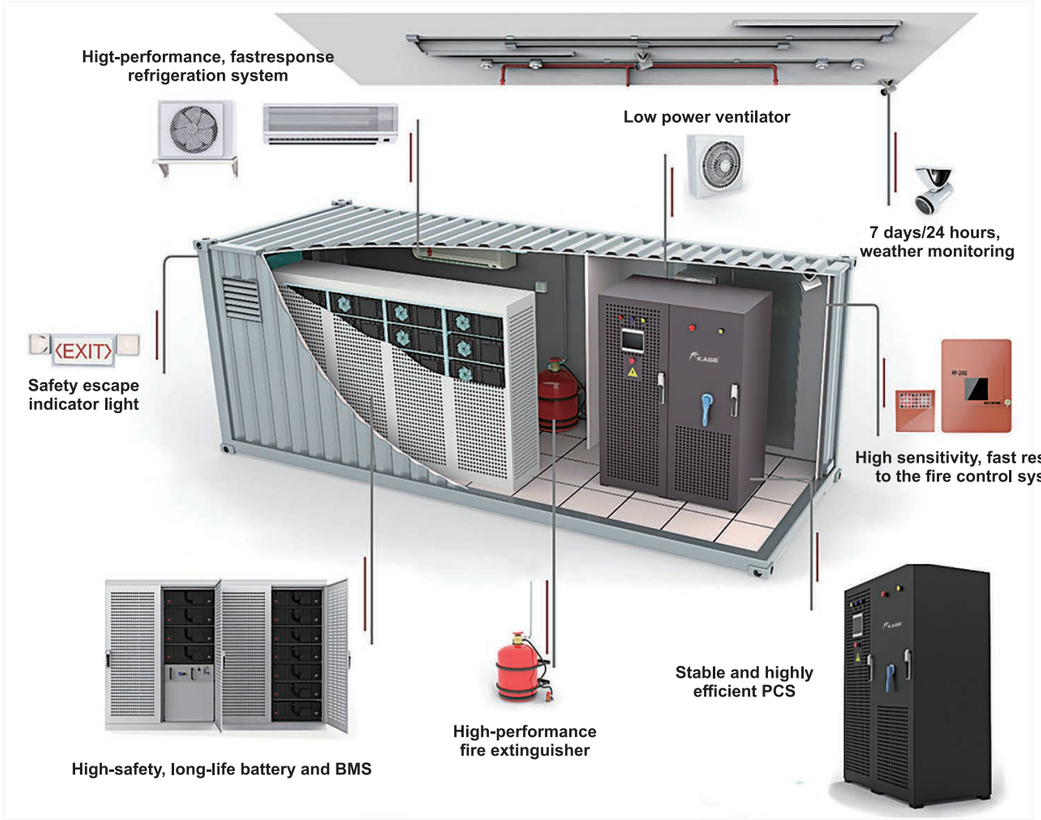
High efficiency and stabability
- Max.system efficiency 90%
- High-efficiency three-level topology

Safety and reliable
- Support coordination of BMS and EMS
- System multiple classes protection

SPECIFICATIONS

Models	HV 20KW Inverter+40KWh Battery	HV 30KW Inverter+61KWh Battery
Maximum PV Input Power	30KW	45KW
Rated Output Power	20KW	30KW
GRID-TIE OPERATION		
PV INPUT (DC)		
Nominal DC Voltage / Maximum DC Voltage	720 VDC / 950 VDC	720 VDC / 950 VDC
Start-up Voltage / Initial Feeding Voltage	500 VDC / 550 VDC	500 VDC / 550 VDC
MPP Voltage Range	460 VDC ~ 900 VDC	460 VDC ~ 900 VDC
Full power MPP Voltage Range	625 VDC ~ 900 VDC	625 VDC ~ 900 VDC
Number of MPP Trackers / Maximum Input Current	1 / 48A	1 / 72A
GRID OUTPUT (AC)		
Nominal Output Voltage	230 VAC* (P-N) / 400 VAC (P-P)	230 VAC* (P-N) / 400 VAC (P-P)
Output Voltage Range	184 - 265 VAC per phase	195.5 - 253 VAC per phase
Output Frequency Range	49 ~ 51 Hz or 59.3 ~ 60.5 Hz	49 ~ 51 Hz or 59.3 ~ 60.5 Hz
Nominal Output Current	29.0 A per phase	43.5 A per phase
Power Factor range	> 0.99	1
EFFICIENCY		
Maximum Conversion Efficiency (DC/AC)	91%	95%
OFF-GRID OPERATION		
AC INPUT		
AC Start-up Voltage / Auto Restart Voltage	120 - 140 VAC / 180 VAC	
Acceptable Input Voltage Range	170 - 290 VAC per phase	
Maximum AC Input Current	40 A	40 A
PV INPUT (DC)		
Maximum DC Power	30KW	45KW
Maximum DC Voltage	950 VDC	950 VDC
MPP Voltage Range	550 VDC ~ 900 VDC	550 VDC ~ 900 VDC
Number of MPP Trackers / Maximum Input Current	1 / 48 A	1 / 72 A
HYBRID OPERATION		
PV INPUT (DC)		
Maximum DC Voltage	720 VDC	720 VDC
Start-up Voltage / Initial Feeding Voltage	500 VDC / 550 VDC	500 VDC / 550 VDC
MPP Voltage Range	550 VDC ~ 900 VDC	460 VDC ~ 900 VDC
Number of MPP Trackers / Maximum Input Current	1 / 48 A	1 / 72 A
GRID OUTPUT (AC)		
Nominal Output Voltage	230 VAC* (P-N) / 400 VAC (P-P)	230 VAC* (P-N) / 400 VAC (P-P)
Output Voltage Range	184 - 265 VAC per phase	195.5 - 253 VAC per phase
Output Frequency Range	47.5 ~ 51.5 Hz or 59.3 ~ 60.5 Hz	47.5 ~ 51.5 Hz or 59.3 ~ 60.5 Hz
Nominal Output Current	29 A per phase	43.5 A per phase
Power Factor	> 0.99	1
AC INPUT		
AC Start-up Voltage / Auto Restart Voltage	120 - 140 VAC per phase / 180 VAC per phase	150 - 170 VAC per phase / 180 VAC per phase
Acceptable Input Voltage Range	170 - 280 VAC per phase	170 - 280 VAC per phase
Maximum AC Input Current	40 A per phase	43.5 A per phase
BATTERY		
Nominal Battery Voltage	409.6 VDC	409.6 VDC
Nominal Battery Capactiy	100Ah	150Ah
GENERAL		
INTERFACE		
Communication Port	RS-232/USB	
Intelligent Slot	Optional SNMP, GPRS, WIFI, Modbus cards available	
ENVIRONMENT		
Humidity	0 ~ 90% RH (Non-Condensing)	
Operating Temperature	- 10°C to 60°C	
Altitude	0 ~ 1000 m	

Industrial & Commercial Energy Storage Solution



Photovoltaic Energy Storage

Wind Power Energy Storage

Industrial And Commercial Application

Rural Areas Without Electricity

Product Features

Flexible configuration
- All in one design, high integration
- Compact size, high power density

High efficiency and stabability
- Max.system efficiency 90%
- High-efficiency three-level topology

Commercial and Industrial application
- Versatile application scenarios, improve quality of power supply

Safety and reliable
- Support coordination of BMS and EMS
- System multiple classes protection

SPECIFICATIONS

Model No.	LEO2000KWH	LEO2400KWH	LEO2800KWH	LEO3200KWH
Inverter Type	Hybrid Inverter	Hybrid Inverter	Hybrid Inverter	Hybrid Inverter
Rated Battery Capacity (standard)	2000KWh	2400KWh	2800KWh	3200KWh
Battery Racks	Steel Racks	Steel Racks	Steel Racks	Steel Racks
Utility Voltage Range	380V/360V-440Vac; 480V/432V - 528Vac 50/45~55Hz; 60/55~65Hz			
AC (Off Grid)	AC400V, 3W+PE, 50/60HZ			
Battery system structure	BMM/BCM/EMS			
DC Side Volt.Range	600-900VDC			
Design Life	15 years OR 6000cycles@25°C80%D0D 0.5CP			
Rated rate	≤0.5CP			
Data Monitor	Wifi Monitor/4G Terminal Monitor			
Installation type	plug-and-play			
Working temperature	-20°C~55°C			
Protection level	Ip54			
Packing base	Standard container			
Fire Suppression	HFC-EA			
Max round-up efficiency	90%			
Noisy(dB)	<75			
Cooling method	HVAC			
Altitude	5000m(derate at over 3000m)			
Wiring type	3W+PE			
BMS comms. type	RS485/CAN			
EMS comms. type	Rs485, TCP/IP, Ethernet			

KAGE ENERGY SOLUTION®

Ⓡ INVERTER MODE Ⓖ PV MODE Ⓑ UTILITY MODE

Portable power station

Product Features

- No working noise.
- Long life and high efficiency rechargeable power lithium ion battery with intelligent battery protection system.
- Compatible with a variety of equipment at the same time power supply.
- Diaital display screen displays the working status of the equipment in real time.
- LED strong light lighting, with a variety of lighting modes.

SPECIFICATIONS

Model No.	KJ300WB	KJ1000WB
		
Rated Power	300W	1000W
Rated Capacity	307.84Wh	932.4Wh
Standard Capacity	3.7V/83200mAh	3.7V/252000mAh
Overload Protection	330±20W	1050±40W
AC Output	230V±10%/50Hz 110V±10%/60Hz (Pure Sine Wave)	230V±10%/50Hz 110V±10%/60Hz (Pure Sine Wave)
USB Output	QC 18W*2	QC 18W*2
Type Coutput	PD20W/PD60W	PDPD60W*2
Cigarette Lighter Output	12-16.8V/8A	14V/8A
Dc5525 Output	12-16.8V/8A	14V/8A
Wireless charging	15W	15W
Charging Input	12~24V/60WMax	12~26V/150WMax
Operating temperature	-20°C~ 60°C	-10°C~ 40°C
Dimension	273*171*163mm	345*227*203mm
Weight (Net Weight)	4.0KG	8.7KG
Weight (With Accessories)	5.0KG	10.7KG

Power Battery Solution

AGV Battery

Specification	48V20Ah	48V40Ah
L(mm)	278	475
W(mm)	165	165
H(mm)	172	172
Nominal Voltage(V)	48	48
Charge Current(A)	10	20
Charge Limit(V)	54	54
Discharge Current(A)	20	40
E.O.V(V)	40	40

On-Gird/ Off-Grid /Hybird Inverter

Product Features

High efficiency power generation
- Advanced MPPT technology with an efficiency of 99.9%.
- A variety of preset charging and discharging working modes,users can choose according to their needs.

Stability and reliability
- SPWM modulation technology make high quality pure sine wave output.
- Support parallel machine to achieve max.30Kw output power.

User Friendly
- Industrial design appearance with modern aesthetics.
- Easy to install and use

Safety Protection
- With comprehensive protection fromhardware to software side
- IEC□SAA□CETL□FCC certificates.

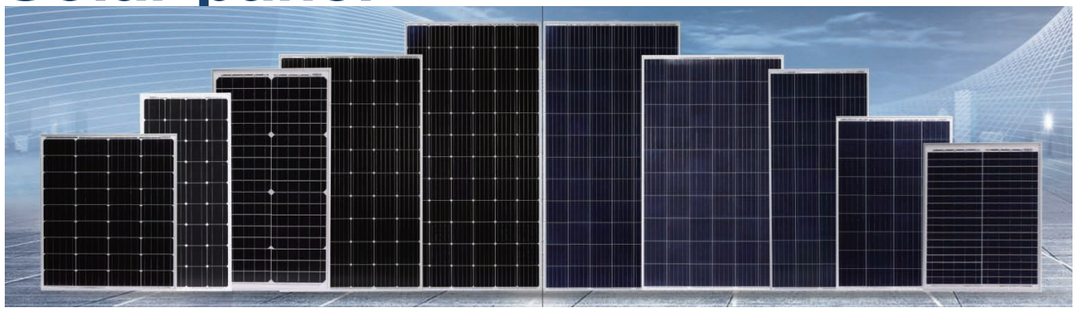
All-in- one system
- Max up to 100 KW

Intelligent management
- OEM or ODM is available

SPECIFICATIONS

GRID-TIE OPERATION				
PV INPUT(DC)				
Nominal DC Voltage/Maximum DC Voltage	360/500VDC			
Start-up Voltage/Initial Feeding Voltage	60VDC/90VDC			
MPPT Voltage Range	60~450VDC			
Maximum Input Current	1/18A	1/22A	1/18A	1/22A
GRID OUTPUT(AC)				
Nominal Output Voltage	220/230/240VAC			
Output Voltage Range	195~253VAC			
Nominal Output Current	15.7A		18.2A	27.0A
Power Factor	>0.99			
EFFICIENCY				
Maximum Conversion Efficiency(DC/AC)	98%			
TWO LOAD OUTPUT POWER				
Full Load	3600W		4200W	6200W
Maxium Main Load	3600W		4200W	6200W
Maxium Second Load(battery mode)	1200W		1400W	2067W
Maximum Load Cut Off Voltage	26VDC	52VDC	26VDC	52VDC
Maximum Load Return Voltage	27VDC	54VDC	27VDC	54VDC
OFF-GRID OPERATION				
AC INPUT				
AC Start-up Voltage/Auto Restart Voltage	120-140VAC/180VAC			
Acceptable Input Voltage Range	90-280VAC or 170-280VAC			
Frequency Range	59~61±1HZ			
Maximum AC Input Current	21.1A		24.7A	36.4A
PV INPUT (DC)				
Nominal DC Voltage/Maximum DC Voltage	360/500VDC			
MPPT Voltage Range	60~450VDC			
Maximum Input Current	1/18A	1/22A	1/18A	1/22A
BATTERY MODE OUTPUT(AC)				
Nominal Output Voltage	220/230/240VAC			
Output Waveform	Pure sine wave			
Efficiency (DC to AC)	94%			
BATTERY& CHARGER				
Nominal DC Voltage	24VDC	48VDC	24VDC	48VDC
Maximum Solar Charging Current	120A	80A	120A	120A
Maximum AC Charging Current	100A	60A	100A	100A
Maximum Solar+AC Charging Current	120A	80A	120A	120A
HYBRID OPERATION				
PV INPUT(DC)				
Nominal DC Voltage/Maximum DC Voltage	360/500VDC			
Start-up Voltage/Initial Feeding Voltage	90VDC/120VDC			
MPPT Voltage Range	60~450VDC			
Maximum Input Current	1/18A	1/22A	1/18A	1/22A
GRID OUTPUT(AC)				
Nominal Output Voltage	220/230/240VAC			
Output Voltage Range	195~253VAC			
Nominal Output Current	15.7A		18.2A	27.0A
AC INPUT				
AC Start-up Voltage/Auto Restart Voltage	120-140VAC/180VAC			
Acceptable Input Voltage Range	90-280VAC or 170-280VAC			
Maximum AC Input Current	21.1A		24.7A	36.4A
Maximum AC Charging Current	100A			
GENERAL				
PHYSICAL				
Dimension,D*W*H(mm)	420*350*110			
Cartoon Dimension,D*W*H(mm)	500*415*180			
Net Weight (kgs)	8.0		8.0	8.9
Gross Weight (kgs)	9.0		9.0	10.0
INTERACE				
Communication Port	RS232/RS485/WIFI/GPRS/LITHIUM BATTERY			
ENVIRONMENT				
Humidity	5% to 95% Relative Humidity(Non-condensing)			
Operating Temperature	-10℃~50℃			
STANDARD				
Compliance Safety	CE			

Solar panel



Model NO.	Dimensions (mm)	Number of Cells	Maximum Power (Pmax-w)	Maximum Power Voltage (Imp/V)	Maximum Power Current (Imp/A)	Open Circuit Voltage (Voc/V)	Short Circuit Current (ISC/A)	PV Cable Length	Weight (KG)
SW010M-36	340*260*17	36(4*9)	10W	18.41V	0.54A	22.78V	0.57A	N/A	0.8kg
SW020M-36	340*425*20	36(4*9)	20W	19.30V	1.04A	23.22V	1.15A	N/A	1.2kg
SW030M-36	340*640*20	36(2*18)	30W	18.40V	1.64A	23.15V	1.80A	N/A	1.8kg
SW040M-36	660*410*25	36(4*9)	40W	18.44V	2.17A	23.15V	2.33A	N/A	2.5kg
SW050M-36	660*530*25	36(4*9)	50W	18.50V	2.71A	23.27V	2.98A	N/A	3.1kg
SW060M-36	660*530*25	36(4*9)	60W	19.55V	3.07A	24.11V	3.25A	N/A	3.1kg
SW075M-36	660*765*25	36(4*9)	75W	19.04V	3.94A	23.94V	4.04A	NA	5.2kg
SW080M-36	660*765*25	36(4*9)	80W	19.01V	4.20A	23.32V	4.65A	N/A	5.2kg
SW090M-36	660*765*25	36(4*9)	90W	19.19V	4.69A	23.81V	4.87A	N/A	5.2kg
SW110M-36	665*1005*30	36(4*9)	110W	19.00V	5.79A	23.17V	6.14A	700mm	7.2kg
SW120M-36	665*1005*30	36(4*9)	120W	19.74V	6.08A	24.11V	6.37A	700mm	7.2kg
SW130M-36	665*1005*30	36(4*9)	130W	19.58V	6.64A	24.69V	6.76A	700mm	7.2kg
SW160M-36	665*1480*30	36(4*9)	160W	18.70V	8.56A	22.93V	8.98A	700mm	10.6kg
SW170M-36	665*1480*30	36(4*9)	170W	19.96V	8.52A	23.31V	9.30A	700mm	10.6kg
SW180M-36	665*1480*30	36(4*9)	180W	19.75V	9.12A	24.14V	9.51A	700mm	10.6kg
SW190M-36	665*1480*30	36(4*9)	190W	20.10V	9.46A	24.31V	9.79A	700mm	10.6kg
SW210M-72	992*1330*30	72(6*12)	210W	36.75V	5.72A	45.15V	5.96A	900mm	13.9kg
SW220M-72	992*1330*30	72(6*12)	220W	37.20V	5.92A	45.44V	6.17A	900mm	13.9kg
SW250M-72	992*1330*30	72(6*12)	250W	38.40V	6.52A	47.15V	6.90A	900mm	13.9kg
SW270M-72	992*1482*35	72(6*12)	270W	38.45V	7.02A	46.14V	7.44A	900mm	15.1kg
SW280M-72	992*1482*35	72(6*12)	280W	38.81V	7.21A	46.57V	7.65A	900mm	15.1kg
SW280M-60	992*1640*35	60(6*10)	280W	31.16V	8.99A	36.96V	9.27A	900mm	17.6kg
SW300M-60	992*1640*35	60(6*10)	300W	32.60V	9.21A	40.15V	9.74A	900mm	17.6kg
SW310M-60	992*1640*35	60(6*10)	310W	33.13V	9.36A	40.54V	9.92A	900mm	17.6kg
SW320M-60	992*1640*35	60(6*10)	320W	32.42V	9.87A	41.15V	10.34A	900mm	17.6kg
SW330M-72	992*1956*35	72(6*12)	330W	37.13V	8.89A	45.39V	9.59A	900mm	20.5kg
SW350M-72	992*1956*35	72(6*12)	350W	38.47V	9.10A	46.23V	9.67A	900mm	20.5kg
SW380MP-72	1002*1979*35	72(6*12)	380W	39.92V	9.52A	49.14V	10.22A	900mm	21kg
SW400MP-72	1002*1979*35	72(6*12)	400W	40.45V	9.89A	49.58V	10.46A	900mm	21kg
SW410MP-72	1002*1979*35	72(6*12)	410W	40.82V	10.05A	49.90V	10.53A	900mm	21kg

INNOVATE GUIDE GREEN SOURCE POWER

Projekt-Nr/-ID
PROJECT NO/-ID
SHES2006010016PV
5623849

GENEHMIGTES PRÜFZEICHEN
LICENSED TEST MARK
SGS TÜV SAAR
IEC 61215
IEC 61730
Periodical Inspection
www.sgs-tuev-saar.com
PVC201224

Prüfberichts-Nr.
TEST REPORT NO.
SHES200601001601
SHES200601001602

Geprüft nach
Tested according to
- IEC 61215-1:2016
- IEC 61215-1-1:2016
- IEC 61215-2:2016
- IEC 61730-1:2016
- IEC 61730-2:2016

Zertifizierte(s) Produkt(e)
Certified product(s)
Crystalline Silicon PV Modules

Technische Daten
Technical data
Details of certified solar module(s) are documented in the test report(s).

Bemerkung(en)
Remark(s):
The certificate is for type approval and based on voluntarily product tests. Any changes to the design, materials, components or processing may require repetition of some of the qualification tests in order to retain type approval.

Längste Gültigkeitsdauer
Latest validity date
12.01.2026

TÜFLO

Specifications of Foldable Solar Panel

Electrical Characteristics				
Maximum Power(Pmax)	50W	100W	150W	200W
Max-power Voltage(Vmp)	18.30V	18.30V	18.30V	18.30V
Max-power Current(mp)	2.73A	5.46A	8.20A	10.92A
Open-circuit Voltage (Voc)	21.96V	21.96V	21.96V	21.96V
Short-circuit Current (Isc)	2.90A	5.79A	8.69A	11.57A
Unfold size	360*395*50mm	535*565*50mm	535*725*60mm	705*725*60mm
Folded size	720*395*25mm	1070*565*25mm	1070*725*30mm	1410*725*30mm
Cell Efficiency	22%			
Output power tolerance	±5%			
Operating Temperature	-40℃~85℃			
*STC condition: 1000 W/m2,1.5AM and 25℃ cell temperature.				

Specifications	
Cell Type	Mono166*166mm
Front Cover	3.2mm tempered glass
Frame Material	Anodized aluminium alloy
Junction Box	IP65 rated
Cable and Connector:	4mm2, Length 700mm+MC4

Intelligent charger

LITHIUM BATTERY CHARGERS

SPECIFICATIONS

FOR LITHIUM AND LIFEPO4 BATTERIES

We highly reccomend you use a LiFePO4 compatible charger.Chargers for lead acid batteries may work, but will decreaseperformance and lifespan of the battery.

TERMINAL CONNECTIONS

Alligator clips / Anderson SB 50 connections depending on charger

SMART BMS COMMUNICATION

Charger will restart or "wake up" a kage Lithium BMS thathas turned off a battery due to short circuit or excessive ampdraw. Simply connect the charger to the battery to initiate a restart.

HOW FAST WILL MY BATTERY CHARGE?

This depends on the amp rating of the charger.To determine yourcharging speed take the amp hour rating of your battery and divideby the charger amp rating.

CAN I CHARGE MY BATTERY FASTER?

For most applications a charging time of 3 - 10 hours provides the longest lifespan for your battery. But if you have an application where you need rapid charging kage Lithium batteries can be safely charged in up to 1 hour (at a rate of 1C).For example, you could use a 20 amp charger with a 23 Ah battery for a 1 hour charge time. Charging at a 1 hour rate does reduce the lifespan over time. In our laboratory testing we found that the longest lifespan for kage Lithium batteries was at a charging speed of 0.3C or less (we recommend that the charger amp rating is1/3 or less of the battery amp hour rating for longest lifespan).

WHAT VOLTAGE SHOULD LIFEPO4 BATTERIES BE CHARGED AT?

14.4 volts is recommended for 12v kage Lithium (LiFePO4) batteries.

CHARGER USAGE

Please follow the usage guidelines associated with each different size of charger.

36V 18A CHARGER
INPUT 100-240 volts, 50/60HZ.
OUTPUT: 43.2 volts, 18.0 amps

48V 15A CHARGER
INPUT 100-240 volts, 50/60HZ.
OUTPUT: 57.6 volts,15.0 amps

36V 8A CHARGER
INPUT 100-240 volts, 50/60HZ.
OUTPUT: 43.2 volts, 18.0 amps

1ZV20A CHARGER
INPUT 100-240 volts, 50/60HZ.
OUTPUT: 28.8 vofts, 20.0 amps

12V 3A CHARGE
INPUT 100-240 volts, 50/60HZ.
OUTPUT: 144 volts, 3.0 amps

1ZV2QA CHARGER
INPUT 100-240 volts, 50/60HZ.
OUTPUT: 144 vohs, 20.0 amps

12V NA CHARGER
INPUT 100-240 volts, 50/60H乙
OUTPtrn 144vohs, 10.0 amps

24V dA CHARGER
INPUT 100240 volts. 50/60HZ
OUTPUT 28.8 volts, 5.D amps

4W15A CHARGER
IINPUT 100-240 vohs, 50/60HZ.
OUTPUT 57.6 volts, 8.0 amps

DISCLAIMER:

These instructions have been written with the most current information available at the time of publication, based on sound engineering principles, research, extensive field experience, and the technical judgment of industry members. However, users are cautioned that this information is subject to change upon developments in technology, field experience, and available fitment data. KAGE cannot nor does not claim any express or implied responsibility, representation, or warranty concerning this catalogs data or recommendations. Although this catalog has been compiled with the utmost care, KAGE shall in no event be liable for any loss or damages claimed to have occurred as a result of use of this data or from the recommendations set henceforth. Users should always use the most current edition of the KAGE catalog & applications and consult their equipment manufacturer5 s user manual or service department for specific replacement battery application information.