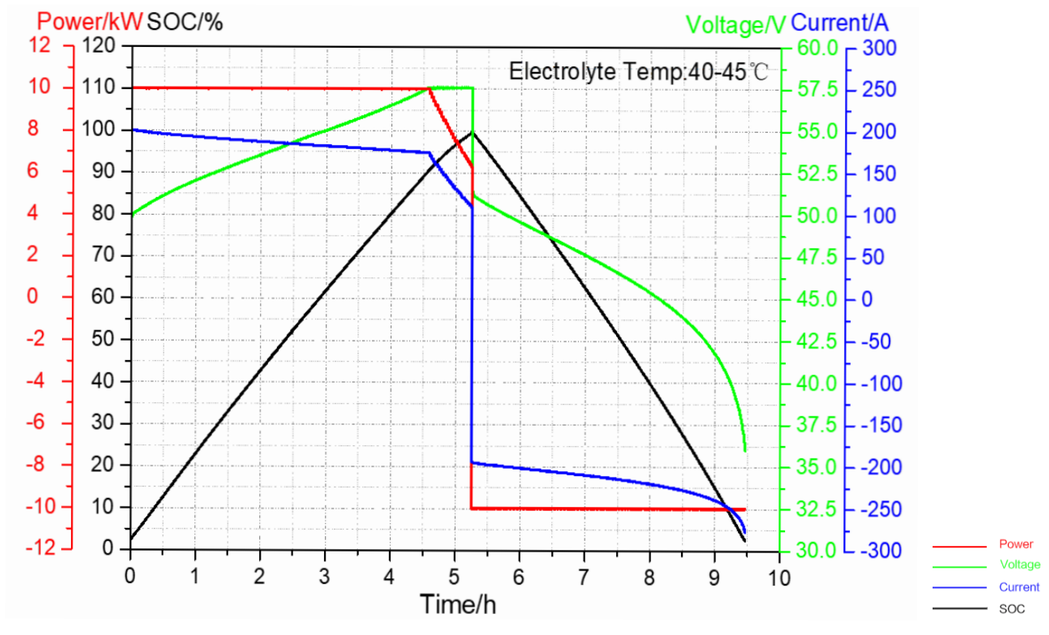
Data and performance

Technical characteristics		
Voltage	**V**	36~57.6
Current	**A**	390(MAX)
Charge power	**kW**	max. 14
Series	**Modules**	Max.6 per string
Dimensions (W*D*H)	**mm**	40i(Indoor): 875*1775*2060; 40o(Outdoor): 915*1775*2110
Weight	**kG**	2800(40i-Indoor/40o-Outdoor)
Ambient operating temp.	**°C**	0~50(40i-Indoor)/-25~50(40o-Outdoor)
Storage temp.	**°C**	-15~50(SOC=50%)
Enclosure		IP20(40i-Indoor) / IP54(40o-Outdoor)
Short circuit current	**A**	1300
Lifetime	**cycles/years**	+20.000 / +25
Communications		Modbus TCP
Certifications		IEC 62932
BMS		Embedded
Auxiliary supply		100~240 VAC 1Φ, 50/60Hz Off=20W, Typical=600W, Max.=800W

Discharge performance			
Duration	**Power**	**Energy**	**Efficiency**
(Hour)	**(kW)**	**(kWh)**	**(%)**
2	14	28	76
3	12	36	78
4	10	40	80
6	7.2	43	82
8	5.6	45	84

10kW/40kWh charge and discharge curve



UPower

A safe and sustainable battery for valuable long duration & heavy cycling application

Brochure

RKP

High modularity

UPower Modules have a modular design to best meet customer power and energy requirements in the most flexible manner, each UPower Module has a nameplate capacity of 10kW/40kWh.

> Global certificate, trademark and patents protection
> Air cooling
> Built in auto-balancing
> Seamless bypass in strings
> 2X energy density compared to conventional VFB
> Compact and water-proof up to 1.4m

UPower Module, designed for peak performance, top quality and reliability, with fletibilify to upgrade and expand the installation if required.

Safety through innovation

Inherent safe

> Use aqueous electrolytes
> Non-flammable
> No thermal runaway
> Even short-circuit produces no lasting damage
> Limited temperature rise as electrolytes act as a large heat sink

Simplified, efficient heat management

> Unique thermal properties simplify heat management
> Cooling down during charge and limited heating up during discharge
> Thermal mass of(electrolytey) limits temperature change
> Ideal for solar integration in areas of hot tempera -tures in daytime when the renewable power is generated

US presidential Green Chemistry & Technology Transfer

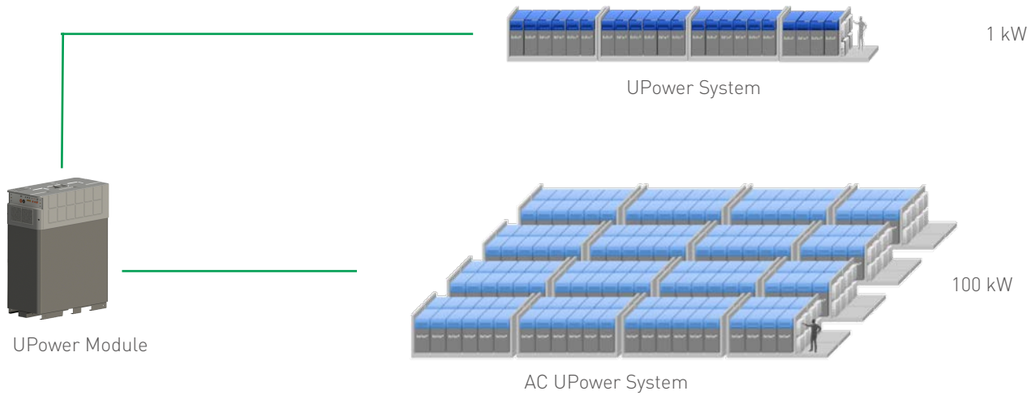
One of first US and CE certified VFB products worldwide

Highest value proved in densely populated cities & communities

Scalable

UPower Module is a high-volume commodity product tailored toensure modularity, flexibility and durability to support a variety of use cases from 40 kWh to several hundreds kWh.

Prefabricated UPower System for quick & reliable large-scale deployments. 6 UPower Modules will be pre-wired and factory tested on each standard flat racks to slide into 20' shipping containers for deployment on site.



Long duration & heavy cycling

Unlimited cycles, with no capacity loss

> Partically unlimited cycles at 100% DOD
> No degradation and 100% access to rated capacity
> Over a life of 25 years
> Capable of long discharge duration up to 24 hours or more
> One UPower capable of limitmess 100kWh life cycle capacity.

Sustainable

> UPower Module 100% recyclable
> Electrolytes 100% reused or recycled into value chemicals
> Permanently retaining vanadium value, facilitating leasing
> Electrolytes made common from industrial wastes, such as soot ashes, slags, etc.
> Saving 44kg CO_2 emission per MWh over that of Li-ion

Low levelized costs over life

> Practically unlimited cycles at 100% DOD
> No degradation and 100% access to rated capacity
> Minimum maintenance over life
> Net positive value after life
> Facilitating leasing to reduce capital cost
> Competitive CapEx that drops quickly along production scaling up

Proven broad application

Storage applications range from grid stability and optimization to commercial, industrial & home storage with substantial cost savings and operational benefits.


Bulk storage

> Peak shaving
> Power resiliency
> Control regulations and ancilliary services
> T&D deferral


Microgrids

> On-grid or off-grid
> Reliability and sustainability
> Maximize PV and wind utilization
> Diesel replacement and fuel savings


Commercial and industrial

> Demand charge reduction
> Time of use savings
> Flexible capacity/ramping
> Load shifting and electricity warehousing


Home storage

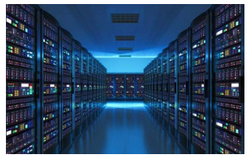
> Stable power supply
> Decrease the dependency on grid
> Integrate roof solar
> Facilitate EV charging posts
> Reduce electrical bills


Renewable integration

> Time shift
> Smoothing
> Firming

EV charging

> 24/7 buffering of limited grid feeds
> On-demand high power EV charging
> Reduce local congestion

Back-up power

> Critical facilities such as hospitals and data centers must have resilient and redundant power feeds
> A reliable alternative for diesel generators

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