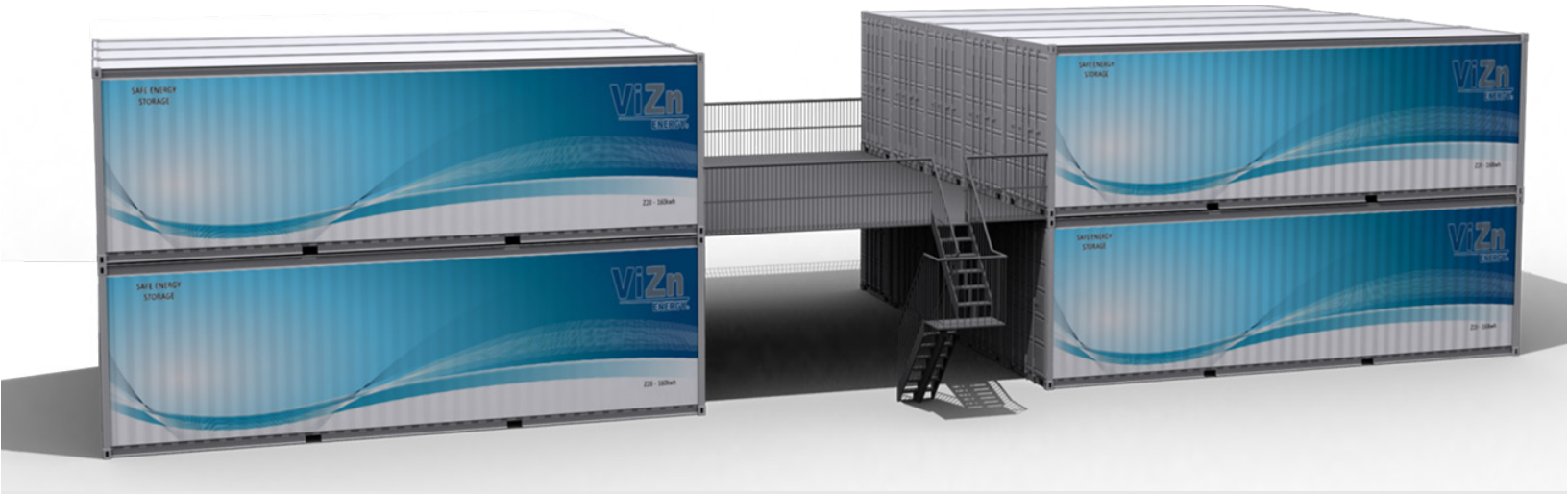
GS200 PRODUCT SHEET



Engineered for Safety. Non-toxic, non-explosive, non-flammable, the GS200 Energy Storage System is self-contained, modular storage system delivering the most cost effective and safest energy storage on the market. The Zinc/Iron redox flow incorporates the most efficient and worry free non-acid chemistry available today. The flexible GS200 modules can be interconnected for higher power and energy requirements.

- **High power, short duration:** Quick response and millisecond (ms) switching between charge and discharge cycles make the GS200 suitable for rapid response applications such as frequency and voltage regulations requiring high power.
- **High capacity, long duration:** High endurance redox design provides flexible State-of-Charge (SOC) output even during the most punishing duty cycles without SOC limits or capacity fade. Greater than eight hours discharge at nominal rated power output, and 2.4 hours continuous discharge at maximum rated power output.
- **State of Charge access:** The GS-200 process allows for 100% dynamic range of the SoC. This access to full capacity of the battery without damage gives the GS200 significantly more useable output than competitive batteries.
- **Heavy-duty cycle:** ViZn's flow battery can cycle at high frequency and at high power several times per day without the ill effects of overheating which enables it to support simultaneous revenue grade applications without reducing the battery life.
- **Safety:** ViZn flow batteries are manufactured with non-toxic, non-explosive and non-flammable materials. The batteries do not pose a risk to people, communities or the environment.
- **Value:** The unique combination of long cycle life, plus high power and high capacity in the ViZn flow battery offers the best value for utility, micro-grids and commercial & industrial applications

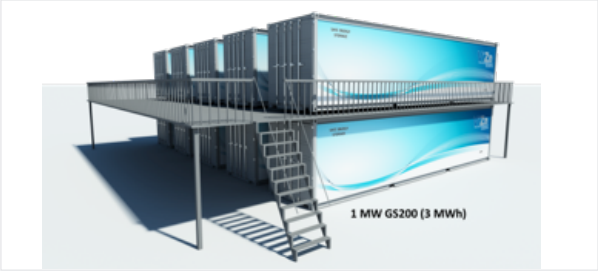
Battery stacks
Designed using abundant, inexpensive materials

Low cost alkaline chemistry
Inherently safe, non-toxic, non-flammable, non-explosive

High quality seamless tanks
Rotomolded high strength polypropylene

Rapid ROI
Low O&M,
20-year life, multi-use

GS200 SPECIFICATION



GS200 1 MW (5 units) 1.0 MW/3.0 MWh

GS200 1.4 MW (7 units)1.4 MW/4.2 MWh

GS200 Size	Nominal Power kW	Maximum Power kW	Max Energy kWh	Max DC Voltage	Max DC Current	Hours @ Max Power	Hours @ Nom Power
1.0 MW	340	1,000	3,000	630	2385	2.4	8.8
1.2 MW	400	1,200	3,600	756	2385	2.4	8.8
1.4 MW	470	1,400	4,200	882	2385	2.4	8.8

ESU ELECTRICAL (TYPICAL 1 MW INSTALLATION)

Life-time	10,000 cycles @ 100% DOD - 20 years
Maximum power	1,000 kW
Energy	3,000 kWh
Duration at maximum power	2.4 hours
Nominal power	340 kW
Duration at nominal power	8.8 hours
Charge to Discharge switching time	<25 ms
Nominal DC voltage range (min/max)	420/630 VDC
Nominal DC current range	470 to 700 A
Max DC current range	2,385 A
ESU efficiency - AC/AC	74% at nominal power
ESU efficiency - DC/DC	90% at nominal power
Auxiliary power required	480 VAC, 60 Hz, 3 Phase

ESU MECHANICAL AND OPERATING

Communication	USB, 485, Modbus Ethernet
External operating temperature	-10° C to 45° C (14° F to 113° F)
Internal ambient temperature	10° C to 38° C
ESU weight power module	18,900 lbs (8,573 kg)
ESU weight energy chemistry module dry/wet	5,000 lbs/120,000 lbs (2.270 kg/54,431 kg)
Safety/Regulatory	Designed using industry standard guidelines

PERFORMANCE

One unique battery for both long duration energy and high frequency power services. Easily stack multiple planned or unplanned services to maximize income streams.

SAFETY

Deploy near densely populated areas and high value grid infrastructure. Runs on a safe chemistry that is non-toxic, non-flammable, and non-explosive. Easy to recycle at end of life.

VALUE

Superior ROI due to multiple income streams, 20-year life, lower O&M expense and negligible degradation across 100% state of charge.