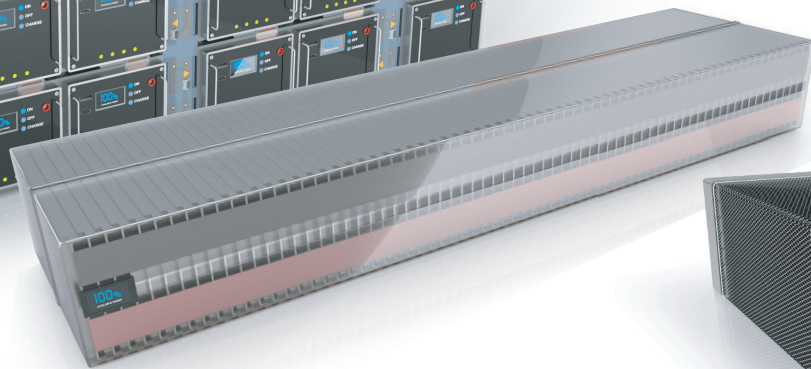


POWERABLE

an Alpine4 company



Modular Power Storage
and Discharging Systems
with Infinite Scalability.



POWERBUILDS

ADAPTABLE SOLID STATE POWER CELLS

POWERABLE

POWERBUILDS

Off-the-Grid, On-the-grid, preparing for the inevitable or meeting customer specifications - The **POWERBUILDS** energy storage solutions exceed any of your power storage expectations when safe and reliable power is a requirement. This intelligent power storage solution utilizes **POWERABLE** power cell technology for receiving, storing and utilizing power no matter the source.

POWERBUILDS solid state lithium batteries continually innovate, adapt and change the way batteries will perform today and into the distant, fast-paced future.

POWERABLE cell enhancements include:

- Solid state electrolyte chemistry.
- 33% higher energy density.
- Higher performance with less weight.
- Discharging temps of -22° F to 140° F.
- Delivers precise amperage as needed.
- Better power delivery than typical lithium chemistries.
- No flammable liquid electrolytes means reduced thermal runaway.

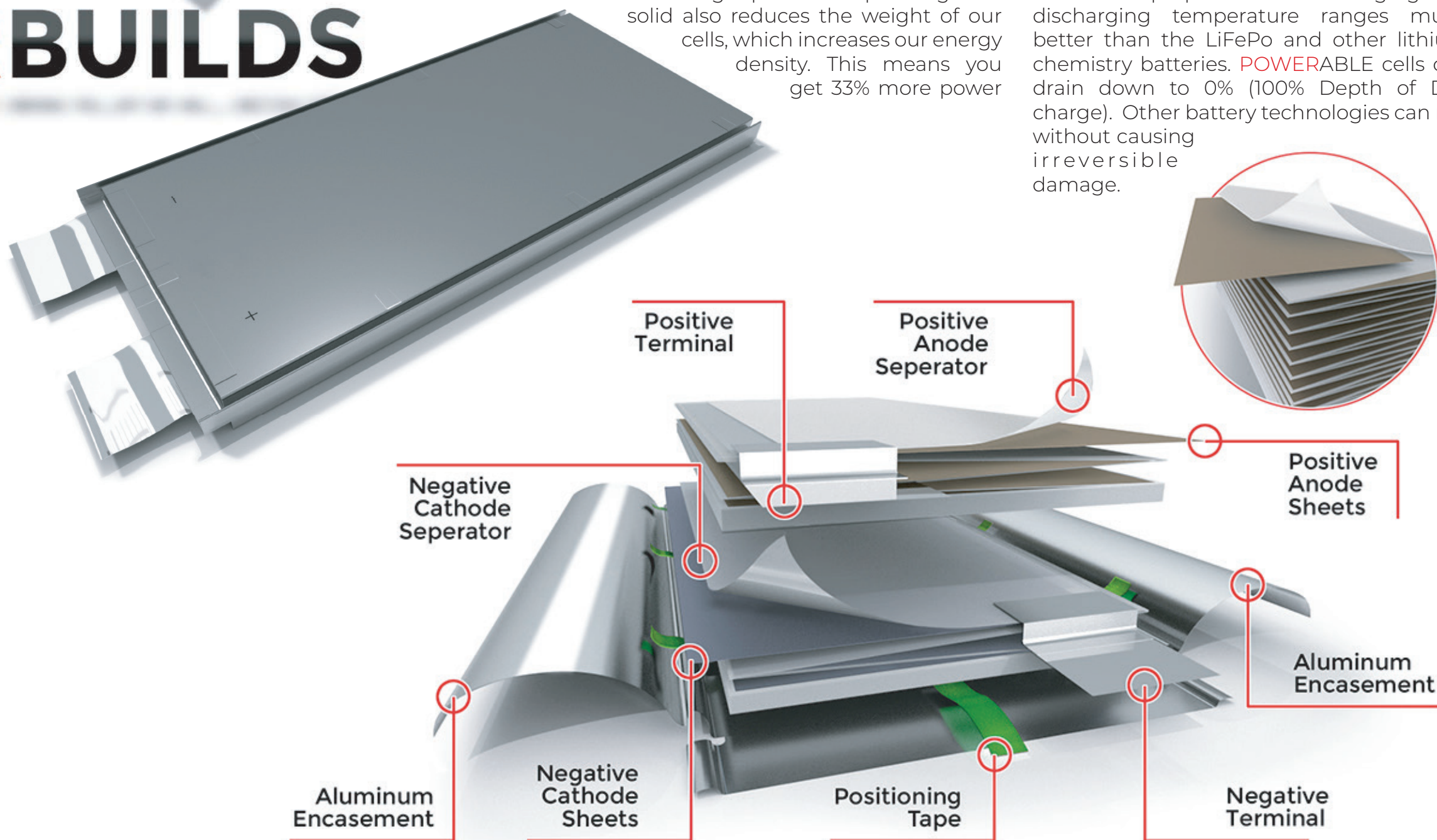
POWERABLE power cells introduce new innovations in Lithium battery technology using a ceramic oxide solid state electrolyte.

Typical lithium ion and Lithium polymer chemistries integrate a flammable gel or liquid electrolyte. Our solid state ceramic oxide electrolyte composition eliminates the use of these highly unstable liquids, greatly reducing thermal runaway conditions that cause typical lithium batteries to ignite.

Eliminating liquid and capitalizing on a solid also reduces the weight of our cells, which increases our energy density. This means you get 33% more power

from the battery using the same weight in materials. Because a solid electrolyte can be much thinner and consistent than a liquid or gel, internal resistances are lowered and power density is greatly improved allowing the cells to deliver the amps from the battery at a much higher speed. This advancement provides the power needed for the most demanding conditions.

POWERABLE low internal resistance makes high charging rates possible (up to 4C / 15M). Solid state properties make charging and discharging temperature ranges much better than the LiFePo and other lithium chemistry batteries. **POWERABLE** cells can drain down to 0% (100% Depth of Discharge). Other battery technologies can not without causing irreversible damage.



POWERBUILDS Puts it All Together.

POWERABLE battery cells have replaced the flammable and heavy liquid electrolyte with a solid state ceramic oxide material. This material is thin and light weight compared to a liquid or gel, which makes our batteries lighter and more compact. Our patented

self-healing ceramic oxide technology reduces the possibility of thermal runaway caused by damaging the lithium cell. This makes living with POWERBUILDS modular, and scalable power storage remarkably safe.

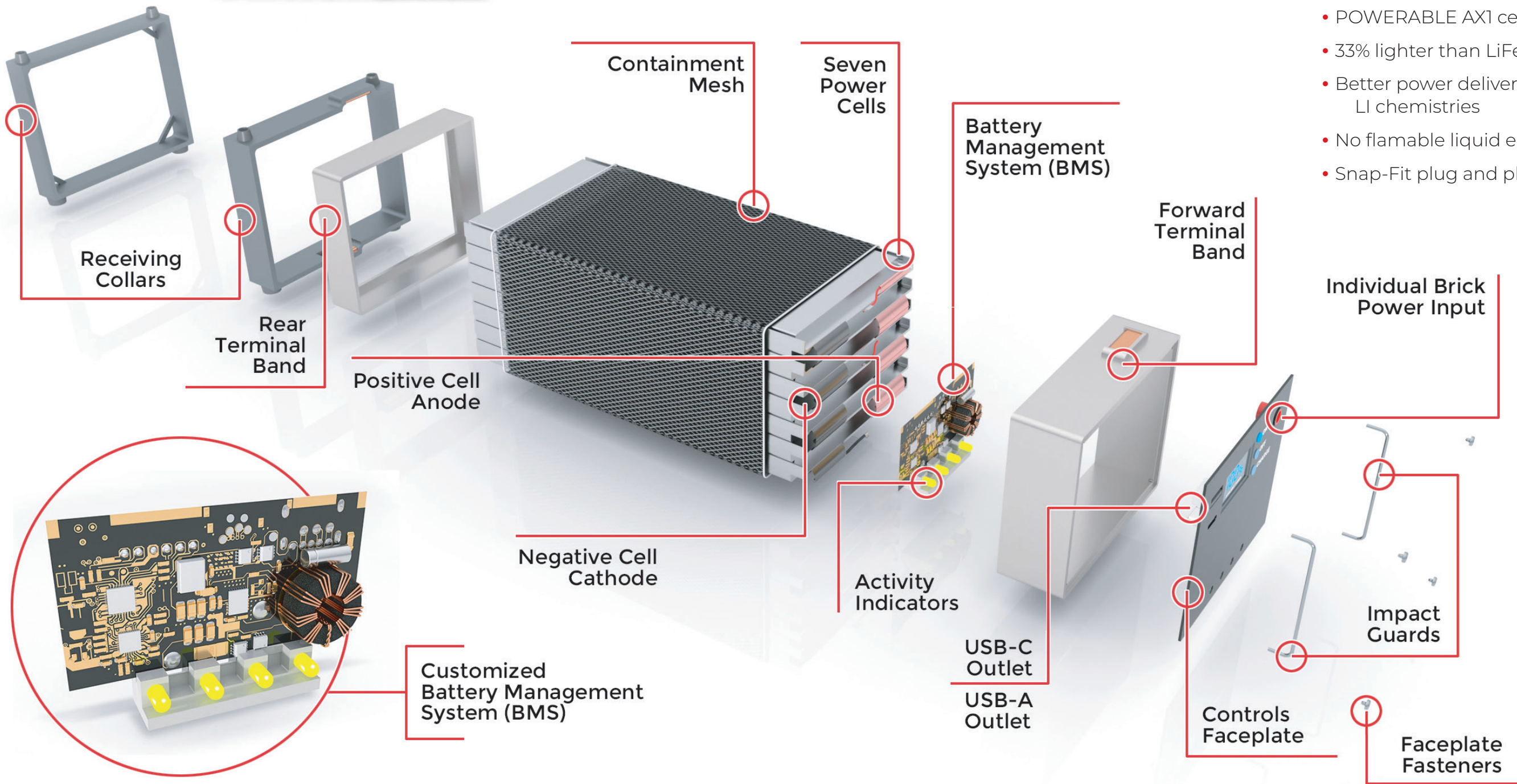
The POWERBUILDS 7-Cell Power Brick is the foundation for building the storage and utilization system you need or will eventually expand into. Each 7-Cell brick incorporates a Battery Management System (BMS) for managing the cells. The BMS protects against overcharge, short circuit, overcurrent, ensures charging and that cells are

evenly discharging. This BMS properly manages the cells for exceptional performance, maximum protection and a truly impressive extended life.

SPECIFICATIONS & FEATURES:

- Solid state lithium ceramic oxide battery
- Integrated Battery Management System
- POWERABLE AX1 cell used
- 33% lighter than LiFePo batteries
- Better power delivery than traditional LI chemistries
- No flammable liquid electrolytes
- Snap-Fit plug and play assembly

POWERBANK



POWERBANK

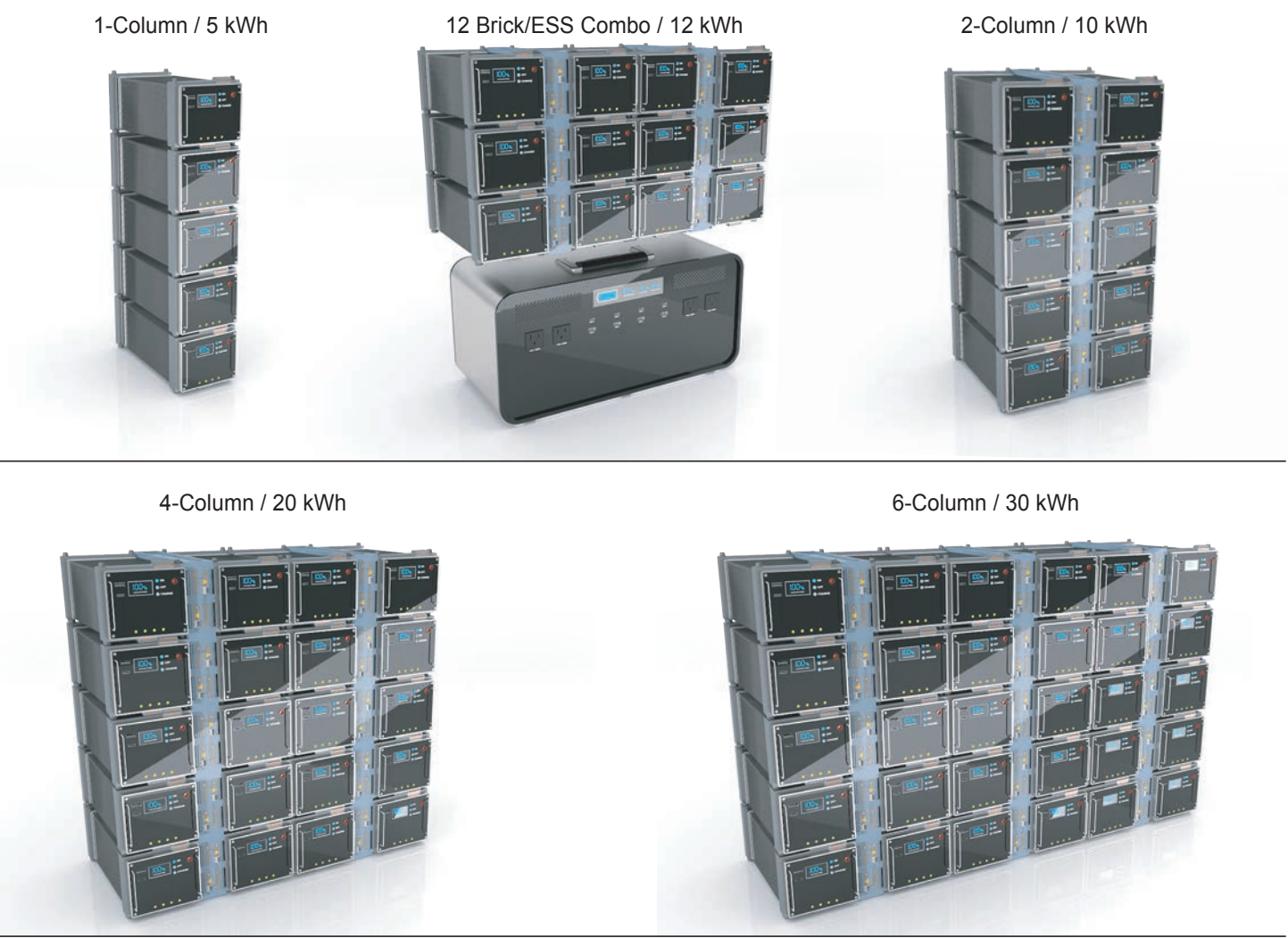


7-Cell Battery Module Specifications AX-03

Nominal Capacity	40Ah
Nominal Voltage	25.2V
Charging Voltage	29.4V
Voltage Termination	17.5V
Charging Specifications	
Super Fast Charging	2C (30 minute), 95%
Standard Charging	1C (40A) constant current (CC) charges to 4.2v, then constant voltage (CV) charging until the charging current is less than 0.02C (0.6A)
Discharging Specifications	
Pulse Discharging	3C (durations < 10S)
Continous High Rate Discharging (Max)	2C
Standard Discharging	1C
Cycle Life	1C/1C 2400 times
	1C/2C 1600 times
	2C/2C 1000 times
Operating Temperatures	
Charging Temperature	-10°C to 0°C / 14°F to 32°F (0.1C Charging)
	0°C to 60°C / 32°F to 140°F (1C Charging)
	10°C to 45°C / 50°F to 113°F (2C Charging)
Discharging Temperature	-30°C to 60°C / -22°F to 140°F
Internal Resistance	1.1+/-0.5mΩ
Weight	+/-3.3kg / ~7.16 lb
Energy Density	> 360Wh/kg (0.5C/0.5C)
Volume Density	> 700Wh/L

POWERBRICKS Always Stacks Up.

1 Kilowatt-Hour (kWh) per 5-Brick Module Column.



POWERBUILDS Vault Enclosure Design Selections Coming Soon.



Each enclosure will allow you to add bricks in stages and the ability to remove a POWERBRICK for portable use.

Modular Thinking
Adaptable Systems
Scalable Performance

POWERABLE battery cells utilize the best of Solid State Lithium technology available. Our battery cell systems are scalable to meet any requirement of a lithium battery.

Look for more POWERABLE products as they come to markets near you.

POWERGEAR

Everyday products that are smaller in scale using 2-30 cells that may charge mobile devices or provide 110V, USB-A or USB-C ports.

POWERMOTION

Rugged water-tight battery products that power vehicles from small Carts to RV's, ATV's to Wheel Chairs that use 20-50 cells.

POWERBUILDS

Stationary power products that produce enough power to operate a home or business utilizing as many battery cells as needed.

POWERCUSTOMS

Our designers and engineers work with you and your specifications to create powerful efficient batteries to over-exceed your needs.