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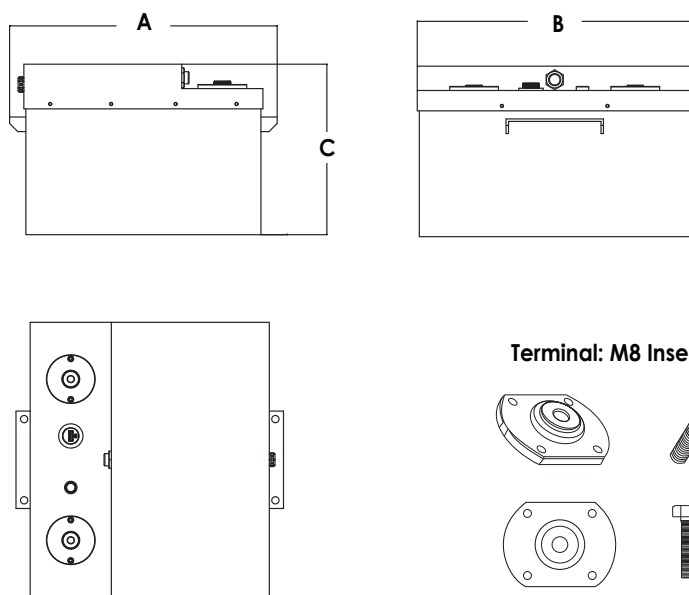
DATA SHEET



48V 2.0 kWh Advanced Energy System (AES)

Discover Advanced Energy Systems allow for equipment design and functionality improvements and deliver productivity gains through enhanced cycling, charge time and weight reductions in stationary and mobile applications. Dramatic improvements in cycle life and charge efficiency combined with zero maintenance requirements provide the end user with significant cost of ownership savings.

Mechanical Drawings



Efficient & Fast Charging

- Charge efficiency > 95% at high charge rates. Increases productivity, reduces energy costs and eliminates the need for investments in battery change out systems.

Efficient and Stable Discharge

- Delivers > 95% of capacity at high uniform and stable voltages during discharge. Increases equipment performance and reduces motor fatigue.

Robust Safety

- Multiple levels of protection prevent operation outside of current, voltage, and temperature limits.

Weight Efficient

- Systems provide > 3 times the energy per weight of high quality lead acid.

Environmentally Safe

- Does not contain toxic metals such as cobalt, lead, cadmium, nor any corrosive acids or alkalis.

100% Recyclable

- End of Life recovery and licensed recycling through Discover's factory warehouse network.

Certified Quality

Discover Energy Corp. and its facilities and products are certified to multiple standards and compliance including:

- ISO 9001, ISO 14001
- UL2271 (pending)
- UL1973 (pending)
- UL2580 (pending)
- IEC62133
- UN38.3 (pending)
- JIS 8715-2 (pending)



Contact Us



Suite 880-999 West Broadway
Vancouver, BC, V5Z 1K5, Canada
Tel: 604.730.2877
Email: info@discover-energy.com
www.discover-energy.com

Mechanical Specifications

Length (A)	326.5 mm	12.9 in
Width (B)	333.5 mm	13.1 in
Height (C)	210 mm	8.3 in
Weight	34.2 kg	75.4 lbs
Cell Modules	16	
Terminal	M8 Insert	
Terminal Torque	7.0-7.7 Nm	5.1-5.7 ft-lbs
Fuse Rating	250 A	
Case	Steel	
IP Ratings	IP54	

Electrical Specifications

Nominal Volts	48V	3.2V per cell module
Min Cut-off Voltage	44.8V	2.8V per cell module
Max Cut-off Voltage	59.2V	3.7V per cell module
Capacity (1C)*	40 Ah	
Capacity (120h)*	40 Ah	
Energy (1C)	2048 Wh	
Energy (120h)	2048 Wh	
Max Continuous Current	150 A	
3 Second Peak Current	300 A	

Cell Chemistry	LiFePO ₄	
Self-Discharge 25°C/77°F	3% per month (battery off)	
Operating Temperature	0°C/32°F	45°C/113°F

Constant Power - Minutes of Discharge			
1000 W	1800 W	2700 W	3600 W
123	68	46	34

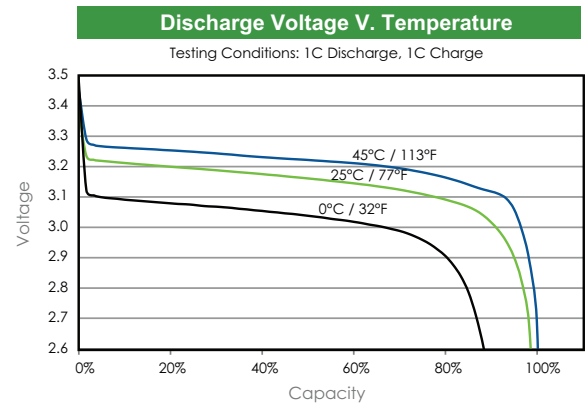
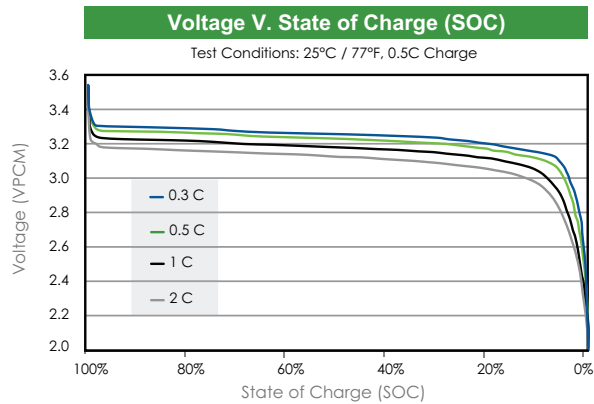
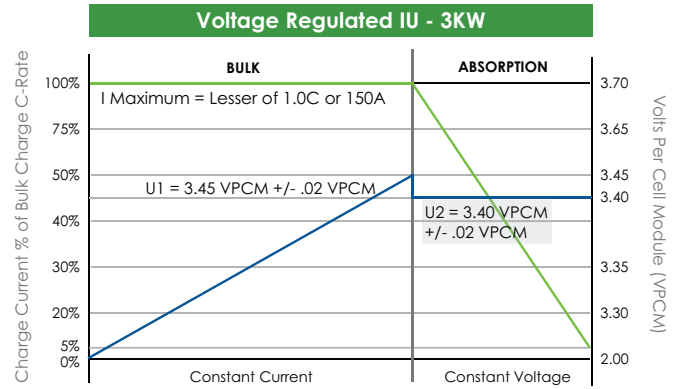
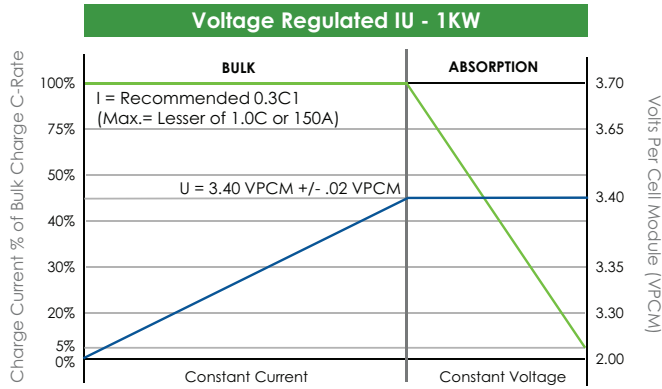
Constant Current - Minutes of Discharge			
@25A	@56A	@100A	@150A
96	43	24	16

BMS - Protection Level

Event	Warning		Fault	
High Temperature	45°C	113°F	60°C	140°F
Low Temperature	5°C	41°F	0°C	32°F
High Voltage	3.55 VPCM		3.70 VPCM	
Low Voltage	3.0 VPCM		2.80 VPCM	
Over Current	125 A		150 A	
Low SOC	N/A		10%	
BMS Type	Advanced			

*Unlike lead acid, Discover AES do not suffer from the same "peukert affect" and will deliver 100% of the rated capacity at all recommended discharge rates.

Graphs



Communication and Data

Communication	
J1939 CAN (database available)	•
USB	•
LCD Display (remote mountable)	•
On/Off Switch (remote mountable)	•
RS232	•

Protection	
Over/Under Voltage	•
Over/Under Temperature	•
Over Current	•
Pre-Charge Control	•

Data logging	
Time Stamps	•
Faults/Warnings	•
I/V/T/Kwh History	•
State of Charge	•

POWER BEYOND YOUR EXPECTATIONS