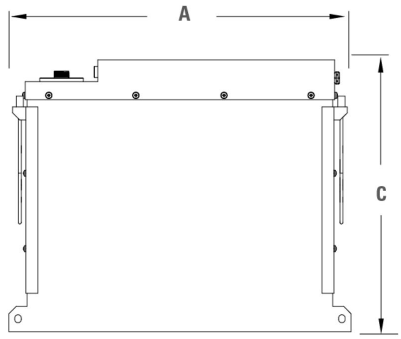
Discover®
Innovative Battery Solutions

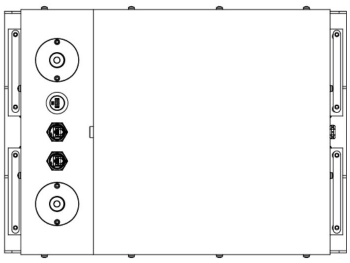
42-48-6650

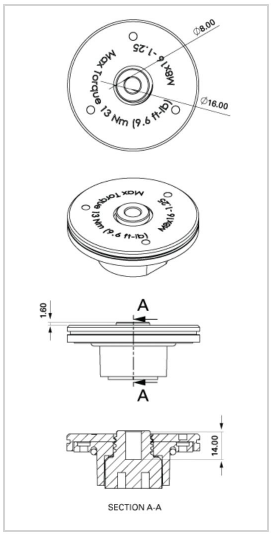
AES LiFePO$_4$ Solar Stationary Battery

Discover® Advanced Energy System (AES) LiFePO$_4$ Lithium solar batteries offer bankable performance and the lowest cost of energy storage per kWh. AES LiFePO$_4$ Lithium batteries are manufactured with the highest-grade LiFePO$_4$ cells and feature a proprietary high peak surge and transient voltage hardened BMS that delivers superior peak power, lightning fast charge and discharge rates and LYNK Solar Gateway functionality for Plug-and-play closed loop integration with the worlds best known off-grid inverters and chargers turning a good system into a great one.

MECHANICAL DRAWINGS







TERMINAL

MECHANICAL SPECIFICATIONS

Length A (in/mm)	18.5	470
Width B (in/mm)	13.7	348
Height C (in/mm)	14.7	373
Total Height D (in/mm)	14.7	373
Weight (lbs/kgs)	192.0	87.0
Terminal*	M8	
Cell(s)	16S26P	
Case Material	Steel	
IP Rating	55	
Electrolyte	LiFePO4	

*TERMINAL TORQUE: 9 Nm +/- 3 / 6.64ft-lb

ELECTRICAL SPECIFICATIONS

Open Circuit Voltage (V)	51.2
Nominal Energy (kWh)	7.39
Useable DoD	90%
Rated Ah Capacity (1C)	129
Charge Voltage (Vdc)	54.4
Max Voltage (Vdc)	58.4
Min Voltage (Vdc)	44.8
Max Continuous Charge Current (Adc)	130
Max Continuous Discharge Current (Adc)	130
Max. Peak Current (Adc)	300
Self Discharge (25°C / 77°F)	< 3% per month (Battery Off)
Charge Temperature	Min: 0°C (32°F) | Max: 45°C (113°F)
Discharge Temperature	Min: -20°C (-4°F) | Max: 50°C (122°F)
Storage Temperature	Min: -20°C (-4°F) | Max: 45°C (113°F)

Electrical Specifications at 25°C.
* Do not exceed maximum voltage at the battery terminals.
CAUTION: Extra considerations must be given to depths of discharge, operating voltages and currents when designing systems for use at maximum operating temperatures.

Minutes of Discharge				
@25A	@56A	@75A	@85A	@100A
312	139	104	91	78

FEATURES

LYNK PORT
- Connects battery string to LYNK Gateway
- Multi-battery BMS communication

HIGH-CURRENT BMS
- Field serviceable BMS and fuse protection
- Plug and Play system wide BMS communication
- Sets Voltage, broadcasts SoC and temperature

AES DASHBOARD
- Battery diagnostic software for PC
- Data export kWh, fault logs to PC
- Update battery BMS firmware

ACCESSORIES

LYNK SOLAR GATEWAY
- Integrated closed-loop communications with the world's best inverter chargers
- Plug and play charger configuration

BENEFITS

ENHANCED RUNTIME
- Double the high-current runtime of lead-acid battery
- Up to 100% usable capacity
- Up to 100% depth of discharge

EXTENDED SERVICE LIFE
- 10x the life of lead-acid battery (BCI-06)
- Unlimited Partial State of Charge cycles
- 10-year energy throughput warranty

FAST CHARGING
- Up to 5x faster than new lead-acid batteries
- Up to 10x faster than aged lead-acid batteries
- 2X faster charging than C/2 Rated lithium batteries
- 1C continuous charge rate, regardless of SoC

SURGE POWER
- Power for off-grid inverter surge demands
- Up to 3C peak power discharge rate
- 1C continuous discharge rate

HIGH-EFFICIENCY
- Up to 50% more energy efficient than a lead-acid battery
- Up to 98% round-trip efficiency

DYNAMIC PERFORMANCE
- Real-time optimization of the charge rate
- Faster recharge from 0% to 100% SoC than lead-acid battery

PARALLEL POWER
- Easy to parallel more capacity
- Linear scaling of charge, discharge and peak capacity
- Parallel up to 20 batteries or 160 kWh per LYNK device

QUICK INSTALL
- Fast installation. No special tools
- Drop-in lead-acid replacement

RELIABLE AND SAFE
- LiFePO$_4$ is thermally safe
- Maintenance-free
- Steel case and cover
- IP 55 rated

CERTIFIED QUALITY

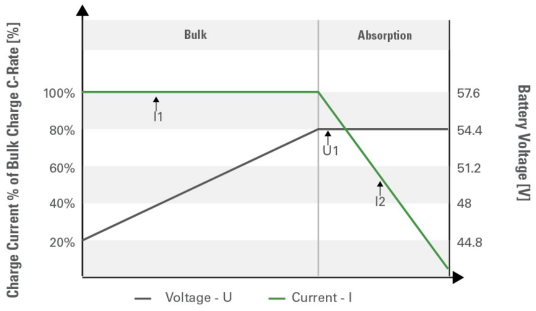
Discover® manufacturing facilities are fully certified to ISO 9001/14001 and OSHA 18001 standards.

CERTIFICATION STANDARDS
- IEC 62133
- UL 1973
- UL 2271
- CE
- UN 38.3

SHIPPING CLASSIFICATION

- UN 3480, Class 9 (Lithium batteries)

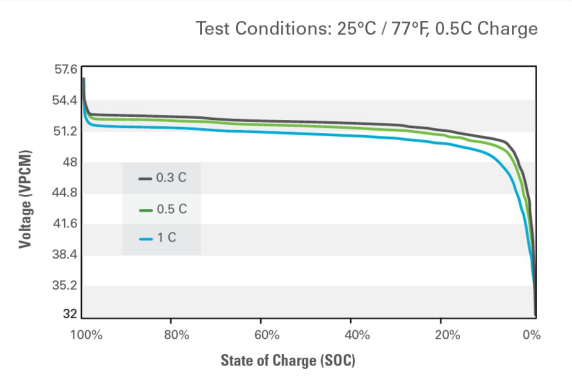
VOLTAGE REGULATED IU CURVE



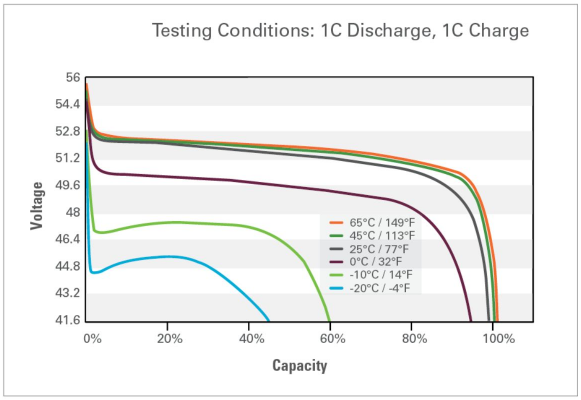
VOLTAGE REGULATED IU CHARGING CURVE PARAMETERS

Nominal Voltage	48 V
Bulk Current (I1)	65 Adc recommended 130 Adc maximum
Absorption Voltage (U1)	54.4 V
Termination Charge Current	I2 ≤ 2.5% C1 Capacity

VOLTAGE IN RELATION TO THE STATE OF CHARGE (SOC)



DISCHARGE VOLTAGE IN RELATION TO THE TEMPERATURE



CAUTION:

Direct connection to DC motors without proper safety protection, motor controllers, and external motor voltage clamping systems (such as high power anti-parallel diodes or braking resistor systems) may result in damage to the internal pack protection system which may result in unsafe situations. Please consult Discover technical support before directly connecting any motor loads.

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