



# ML280-12.8 A

Lithium LiFePO4 Battery

Lead Acid Replacement Series





# LITHIUM IRON PHOSPHATE Battery

## ELECTRICAL PERFORMANCE

Rated voltage	12.8V, 4 string
Battery voltage range	10-14.6V
Rated capacity	300Ah
Total energy	3.84KWh
Cycles	"within 8000 cycles, 0.5C charge and discharge, Temp.25 ±2 °C"
Charge-discharge capacity efficiency	≥96%
Cells	EVE A Grade , LiFePO4 Cell 280Ah (310Ah)
Standard charging current (A)	0.2C ~ 0.5C (60A~140 A)
Standard discharge current (A)	0.2C ~ 0.5C (60A~140 A)
Maximum continuous charging and discharging current (A)	150A

## MECHANICAL PERFORMANCE

Gross weight	26 KG
Shell material	Abs rubber shell
Product size (mm)	522*244*220mm (L*W*H)
Input-output mode	M8
Enclosure Protection	IP 65
Composition mode of battery pack	4 series and 1 parallel, a total of 1 battery pack.

## TEMPERATURE PERFORMANCE

Battery system charging and discharging ambient temperature	Charge at 0~45°C and Discharge at -20°C~ 60 °C
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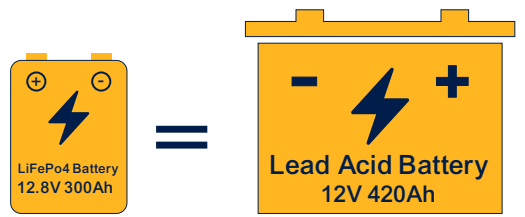
## BMS PERFORMANCE

Charging protection	Recommended Charge Voltage	14.4V
	Overcharge protection voltage	3.65 V ±30 (mv)
	Overcharge protection delay	2000 ±1000 (ms)
	Overcharge protection recovery voltage	3.55 V ±50 (mv)
	Charging overcurrent delay	160+-(5A)
Balanced	Balanced turn-on voltage	2.2 V
	Balanced current	1000 ±500 (ms)

Discharge protection	Overdischarge protection voltage	2.5 +/- (0.1) V
	Overdischarge protection delay	2000 ±1000 (ms)
	Overdischarge protection recovery voltage	2.7 +/- (0.1) V
	Delay of discharge overcurrent protection	7+-(3)S
	Short circuit protection delay	560-900 (US)
Max Batteries Connection	Maximum Batteries in Series	4
	Maximum Batteries in Parallel	2

	Voltage (V)	Capacity (AH)	Energy (KWH)	DOD (depth of discharge)	Usable Energy (KWH)	Equivalent
ML280-12.8 A	12.8	300	3.8	90%	3.5	(12.8V 300Ah) Lithium Battery Equivalent to (12V 420Ah) Lead Acid Battery
420Ah LA battery	12	420	5.0	70%	3.5	

# INSTRUCTIONS



1. Use a lithium charger (60A recommended, 150A max) to preserve capacity and warranty.
2. It is not recommended to use a lead acid battery charger as it will reduce the warranty to 18 months.
3. You can only connect 4 batteries max in series and 2 in parallel. Series connection reduces warranty to 18 months.
4. The product is non-disassembling, with no unauthorized dismantling and maintenance only by Marvel Technical team.
5. Using a Lithium battery provides 30~40% more effective capacity than its Lead-Acid Equivalent.