

**CBB**<sup>®</sup>  
BATTERY

Transportation

**AGM**

START  
A  
STOP

# 12V LiFePo4 Starter Battery

**24**  
MONTHS  
WARRANTY



[www.cbb-battery.com](http://www.cbb-battery.com)



# 12V Starter Battery

## LIFEPO4 Technology

CBB's LiFePO4 Lithium-ion 12V Engine Start Battery sets a new performance standard for Start-Stop & Micro-hybrid vehicle applications by delivering outstanding cold cranking power with a battery that outperforms incumbent lead-acid technologies. By utilizing advanced chemistry and system design, the CBB solution offers outstanding cycle life, high charge acceptance, and up to a 60% weight reduction over lead-acid. CBB's LIFEPO4 difference provides a robust lead-free solution to the rigorous demands of start-stop and recuperation, which are key fuel saving features of a micro-hybrid vehicle. Already producing a third generation product, CBB continues to set the bar on lithium ion battery performance.



### Cold Temperature Performance

CBB's breakthrough Lithium-ion chemistry now delivers a wider temperature operating range for exceptional cold crank performance that outperforms lead acid and also contributes to system reliability.

### Extensive Cycle Life

CBB's LIFEPO4 Battery delivers a solution that widely performs for the life of the vehicle. Long life and high durability in start-stop applications defer the need to replace the 12V Starter Battery, which improves vehicle manufacturers warranty risk and total cost of ownership for the consumer.

### Dynamic Charge Acceptance

CBB's robust 12V battery can accept high rates of charge and capture several times more energy from regenerative braking for improved vehicle fuel economy and reduced emissions. This advantage is sustained over product life and does not suffer the severe performance degradation experienced with lead-acid technologies.

### Lighter Weight

CBB's 12V system weighs less than half of the lead-acid battery that it is replacing, contributing to increased vehicle fuel economy and better performance.

### Reliability

Smart on-board battery management system (BMS) electronics report real-time data and diagnostics to protect the battery and prevent premature failures, reducing service and warranty costs. The integrated BMS provides cell balancing and built-in state of charge and state of health measurement and calculation which allows for removal of intelligent battery sensors from the vehicle system.

The Difference Between Li(NiCoMn)o2 Polymer, Lead-acid battery and Lithium Iron Phosphate Battery

Battery	Li(NiCoMn)o2 Polymer	Lithium Iron Phosphate	Lead-acid battery
Rated Voltage	11.v	12.8v	12.8v
Dimension	smaller	bigger	biggest
Weight	light	not heavy	heavy
Big Current Discharge	good	best	better
Output Power(Motive)	strong	strongest	stronger
Cold Cranking Power	best	good	good
Hot Cranking Power	good	best	better
Safety	safe(explosion proof)	safe(explosion proof)	safe
Cyclic Life	1000 times	2000times	500times
Cost	higher	highest	cheapest



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★ **Technical Specification**

12V LiFePo4 Starter Battery												
Model	Voltage (V)	CCA (A) -18°C	Battery Dimension (mm)				Watt Hour(WH)	Capacity C20 (Ah)	lay-out	Terminal	Hold-down	Weight (Appra.)
			L	W	H	T. H						
LFB60B24L	12.8	460	238	129	200	220	384	30	0	B/A	B1	3.6
LFB60B24R	12.8	460	238	129	200	220	384	30	1	B/A	B1	3.6
LFB80D23L	12.8	650	230	171	203	220	512	40	0	A	B1	4.6
LFB80D23R	12.8	650	230	171	203	220	512	40	1	A	B1	4.6
LFB90D26L	12.8	710	260	173	200	220	640	50	0	A	B1	6.2
LFB90D26R	12.8	710	260	173	200	220	640	50	1	A	B1	6.2
LFB115D31L	12.8	860	306	173	202	220	768	60	0	A	B1	7.2
LFB115D31R	12.8	860	306	173	202	220	768	60	1	A	B1	7.2
LFB56678	12.8	780	278	175	175	175	512	40	0	A	B13	5.5
LFB57280	12.8	800	278	175	190	190	576	45	0	A	B13	5.7
LFB58086	12.8	860	305	175	190	190	576	45	0	A	B13	6.5
LFB60090	12.8	900	353	175	190	190	768	60	0	A	B13	8.3
LFB61010	12.8	1000	394	175	190	190	896	70	0	A	B13	9.5

**The comparasion chart of Lithium Iron Phosphate and other Lithium Battery**

Item	Working Voltage	Capacity/Wei ght	Cyclic Life	Safety	Cost	Application
LiCoO2 Lithium Cobaltate	3.6V	160m Ah/g	>500times	lower	highest	small size
LiNiO2 Lithium Nickel	3.3V	200mAh/g	>500times	lower	higher	small size
LiNiCoO2 -Lithium Nickel Cobalt	3.7V	180mAh/g	>500times	lower	higher	small size
LiNiMnO2 Lithium Nickel Manganate	3.7V	160mAh/g	>500times	low	higher	small size
LiCoMnO2 Lithium Cobalt Manganate	3.7V	190mAh/g	>500times	low	hgher	small size
LiMnO2 Lithium Manganate	3.8V	110mAh/g	>500times	safe	lower	motive
LiFePo4 Lithium Iron Phosphate	3.2V	160mAh/g	>2000times	reliable	higer	Motive

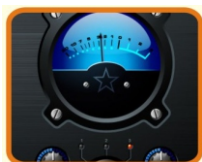


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★ Performance Advantages



### Constant Voltage

Fast Charge and big current discharge and charge capability



### Longer Cyclic Life

More than 1500 times ,much longer than lead acid battery of 300 times



### Fuel Saving

More powerful and faster in starting



### Lower Self Discharge

Monthly 1.5% Self Discharge,much shorter than lead-acid battery of 10%



### Fast Charge Availability

Battery can be fully charged within only 15 minutes,instead of more than 6 hours for lead acid battery



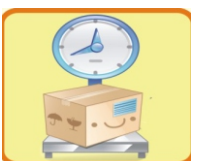
### Pulse Big Current

Pulse Output Current about 500-700A , better for audio and air conditioner,be able to start engine below -20°C.



### BMS Protection

BMS protect any overcharge,over discharge,short circuit, over current and extreme temperature



### Light Weight

Light Weight but Powerful output makes car more energetic



## The Distinct Difference Between Lead-Acid Battery and Lithium Ion Battery



Items	Lead-Acid Battery-60038MF	Lithium Battery -LFP600090
Appearance		
size	350*175*190mm	353*175*190mm
Weight	23KGS(Heavy)	8.3KGS(Light) ★
Starting Voltage	12.81V(lower)	13.14V(Higher) ★
Cold Cranking Power	810A	1775A ★
Electrolyte	Acid(possible leakage)	Dry(No leakage) ★
Charging Effecient Time	Low and Slow	Fast & Efficient-3times ★
Overdischarge Protection	No	BMS Protection ★
Engine Starting Speed	Slow	Pulse Starting ★
Emergency Starting	not enough,needing other power	One Pulse Starting ★
Service Life	200-300 cycles	1200-1500cycles ★
Terminal	Lead(easy to be oxidized)	Copper-better conductive ★
Engine Power Output	Slow and not full	Fast and powerful ★
Fuel Saving	Lower and Slow	Full,powerfull ★
Audio Power	needing more battery	one battery is enough ★