

# LiFePO4 Battery Pack

<b>Operating Voltage</b>	<b>12-12.8 V</b>
<b>Max Current</b>	<b>7 A</b>
<b>Capacity</b>	<b>3000 mAh</b>
<b>Charge Time</b>	<b>1.5-2 hrs</b>
<b>Cut-off voltage</b>	<b>10 V</b>

These batteries are protected by an internal PCM, which will disconnect the power in the case of overheating, over-charging, over-discharging, and short circuiting.

**NOTE:** The short circuit protection doesn't kick in until somewhere over 15 A, which will

fry everything from breadboard wires to stepper motors as effectively as throwing them in mount doom. Always double check your circuit before connecting your battery!

## Charging:

- DO NOT leave the battery on the charger for long periods of time (like for multiple days).
- The green light on the charger does not indicate 100% charge. Rather, it indicates a switch from continuous current to continuous voltage charging. For most applications, this level of charge is sufficient.

If you have other questions, or if your battery seems to be struggling, come visit us in the Project Support Center (CB 154). You can also access the manufacturer datasheet using the QR code below.



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	Battery Type	Pros	Cons
Rechargeable	Lithium-Ion	<ul style="list-style-type: none"> <li>• High energy density</li> <li>• Maintains charge well (loses 5% of charge per month)</li> <li>• Withstand many charge cycles</li> <li>• May be charged at any time – without full discharge</li> </ul>	<ul style="list-style-type: none"> <li>• Generally larger</li> <li>• Risk of explosion with excessive current draw or overcharging</li> <li>• Voltage decreases as battery drains</li> </ul>
	NiCd	<ul style="list-style-type: none"> <li>• Inexpensive</li> <li>• Can source higher currents</li> <li>• Voltage is close to constant until battery is drained</li> </ul>	<ul style="list-style-type: none"> <li>• Low energy density</li> <li>• Loses charge quickly when stored</li> <li>• Must be fully discharged to recharge</li> </ul>
	NiMH	<ul style="list-style-type: none"> <li>• High energy to volume ratio</li> <li>• Voltage is close to constant until battery is drained</li> </ul>	<ul style="list-style-type: none"> <li>• Limited cycle count (about 500)</li> <li>• Must be fully discharged to recharge</li> </ul>
Non-Rechargeable	Lithium	<ul style="list-style-type: none"> <li>• Very high energy density</li> <li>• Functions in wide range of temperatures</li> <li>• Great shelf life (10-12 years)</li> <li>• Suitable for higher current draw applications</li> </ul>	<ul style="list-style-type: none"> <li>• Much more expensive than other options</li> <li>• Highly flammable</li> </ul>
	Alkaline	<ul style="list-style-type: none"> <li>• Good energy density</li> <li>• Functions in wide range of temperatures</li> <li>• Good shelf life (5-10 years)</li> </ul>	<ul style="list-style-type: none"> <li>• Heavy</li> <li>• Toxic</li> <li>• Corrosive</li> <li>• Capacity decreases significantly in high current draw</li> </ul>
	Carbon Zinc	<ul style="list-style-type: none"> <li>• Cheap</li> </ul>	<ul style="list-style-type: none"> <li>• High internal resistance limits max current draw</li> </ul>

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			<p>(only suitable in low current applications)</p> <ul style="list-style-type: none"><li>• Temperature sensitive, do not work well hot or cold</li><li>• Low energy density</li></ul>
	Silver Chloride	<ul style="list-style-type: none"><li>• Suitable for higher current draw applications</li><li>• Functions in low temperature settings</li></ul>	<ul style="list-style-type: none"><li>• Corrosive</li><li>• Generally more expensive</li></ul>