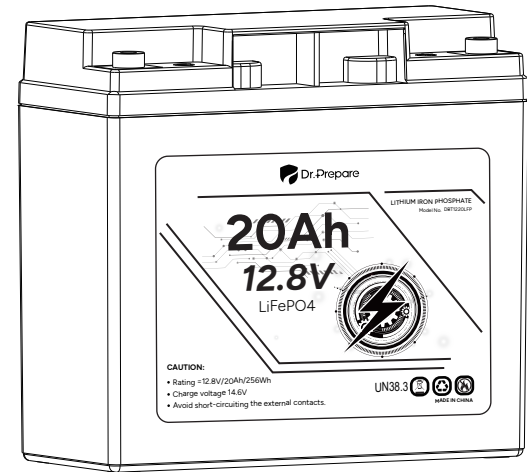




12V 20Ah LITHIUM IRON PHOSPHATE (LiFePO4)

MODEL: DBT1220LFP



This user manual offers a brief walkthrough of the unit's features.
Please keep the user manual in hand for future reference.

Still need help? Feel free to send us an email at support@drprepare.com

IMPORTANT SAFETY INSTRUCTIONS

- Please read through all the labels on the battery and this user guide before the first use.
- When connecting batteries in series or in parallel, read all the precautions about How to Connect Battery first, or you may damage the batteries.
- Keep the battery away from rain, splashes, and any wet locations.
- DO NOT short circuit the battery.
- DO NOT reverse polarity connection.
- DO NOT expose the battery to fire, extreme heat conditions, or close to any heat sources.
- DO NOT dismantle or modify the battery yourself.
- DO NOT drop the battery from a high altitude.
- DO NOT strike fiercely or penetrate the battery.
- Secure the battery in place to avoid any violent shaking when installing it in your vehicle.
- Please use a certified compatible LFP battery charger to charge the battery. The recommended optimal charging current is around 10 amps, while the maximum is 20 amps. Over-amped charging current will shorten the battery's lifespan.

SPECIFICATIONS

General	
Battery type	Lithium iron phosphate (LiFePO4)
Rated capacity	20Ah (256Wh)
Rated voltage	12.8V
Max. charging voltage	14.6V
Max. discharging current	20Ah
Recommended charging current	10A optimal / 20A max.
Cycle lifespan	More than 4000 cycles
Charging temperature range	32°F~131°F / 0°C~ 50°C
Discharging temperature range	-4°F~131°F / -20°C~ 55°C
High temperature protection	Charging: 113°F~131°F /50°C ± 5°C
	Discharging: 149°F~167°F /70°C ± 5°C
Storage temperature range	-4°F~113°F / -20°C~45°C (Store for 1-3 months)
	-4°F~68°F / -20°C~20°C (Store for 1 year)
Controller Setting (for reference)	
System voltage	12V (x N)*
Boost charge voltage	14.2V (x N)*
Over-discharge recover voltage	12.6V (x N)*
Over-discharge voltage	11.1V (x N)*

Dimension and Weight

Size (L x H x W)	7.02 x 2.96 x 6.44 inches 180 x 76 x 165 mm
Net weight	5.95 lbs / 2.7kg

HOW TO SET THE CONTROLLER

- After connecting the battery to a Li-compatible controller, you need to set the Battery Type to Li.
- If your controller does not provide the Li battery type option, you can set the parameter of Boost, Absorption, and Float to 14.2V x N. Then, set the over-discharge parameter to 11.1V x N.

Note:

(x N)* : When it comes to a 24V(N=2) or 48V(N=4) system, the voltage should multiply by the number of series batteries.

TIPS FOR BETTER PERFORMANCE

How to Connect Battery

1. Please make sure all batteries that are connected meet the following criteria:
 - Batteries have the Same Capacity (Ah), Same Voltage (V), and are the Same Type (lithium iron phosphate (LiFePO4)).
 - As the built-in battery management system (BMS) may vary between brands, we advise you to choose batteries from the Same Brand for connection.
2. For optimal performance, we kindly advise you to follow the requirements listed below:
 - Fully charge all ready-to-connect batteries.

- All battery interconnect cables should be the same wire gauge (AWG) and length, and come from the same brand. Otherwise, the impedance will be inconsistent, resulting in unbalanced charge and discharge performance.
- Connect your batteries one by one in series (up to 4 batteries) or in parallel (up to 4 batteries). Secure all cable connections between the cable lugs and terminals.

3. When determining the cable size (AWG) for your system, there are two factors to consider:

- The size of the electrical load you want to power.
- The distance between the electrical load and your batteries.

For reference, see the following chart:

— Cables for Controller to Battery

Solar Input Current	5A	10A	20A	30A	40A	60A
Wire Cross Section Area (mm ²)	1.5	2.5	5	8	10	12
Wire AWG	15	13	10	8	7	6

— Cables for Inverter to Battery

Cable Size	Copper Conductor Diameter (inches)	Maximum Amperage
6 AWG	0.20	115
4 AWG	0.23	150
2 AWG	0.30	205
1/0 AWG	0.37	285
2/0 AWG	0.43	325
4/0 AWG	0.56	440

About Rated Power

- The max. rated power of this battery is 256W. When connecting 2 batteries in parallel, the theoretical max. power is 256W x 2 = 512W.
- Because home appliances draw power from the inverter, so if you're using a 512W battery bank, and the peak power of your home appliance is higher than 500W, this home appliance will be unable to work via a 500W inverter.
- The peak power of an AC motor appliance, such as an DC motor or water pump, is double its rated power. For example, when using a 300W DC Motor or water pump, it requires 2 x 300W = 600W of the battery bank and inverter to support normal working conditions.
- But please note that the peak power of some home appliances is 3 times the rated power.
- Please consult the manufacturers of your home appliances for the exact peak power data.

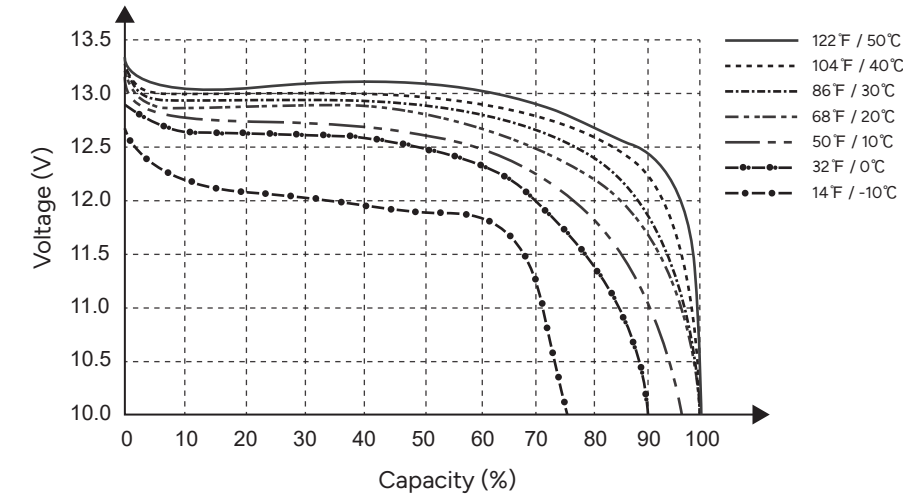
How to Charge the Battery

- The optimal charging current for a single lithium battery is around 10 amps, which can extend the battery's lifespan. And the maximum charging current is 20 amps. The amount of charging current is determined by your DC-DC charger, charge controller, or other compatible lithium battery charger you use.
- When the battery is fully discharged at a continuous 20A, we do NOT recommend re-charging it at 10A immediately, which will trigger high-temperature charging protection.

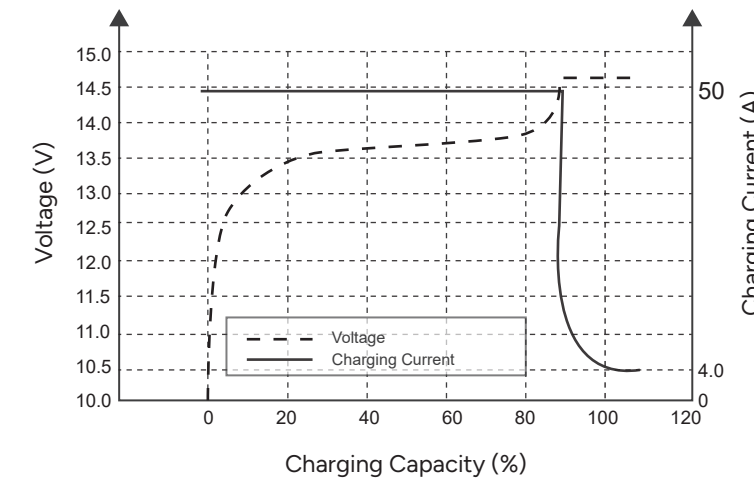
How to Store Battery

- To store your battery, keep it at least 30%-50% charged. We recommend that you charge the battery every 6 months when not in use to prevent overdischarge.

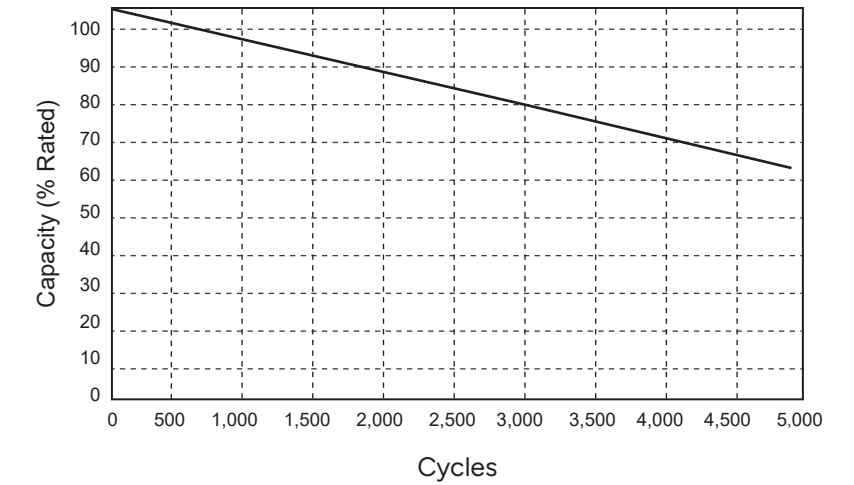
DISCHARGE CURVE AT DIFFERENT TEMPERATURES (0.5C)



CHARGING PERFORMANCE (0.5C, 77°F/25°C)



CYCLE LIFE VERSUS DEPTH OF DISCHARGE (0.5C, 77°F/25°C)



WARRANTY

- Dr.Prepare LiFePO4 batteries are covered by a 10-year limited warranty from the original purchase date. If you encounter any issues during usage, feel free to contact us at support@drprepare.com
- We only provide after-sales service for products sold by Dr.Prepare or retailers and distributors authorized by Dr.Prepare. If you have purchased your unit through other channels, please contact your seller for more information about the return and warranty.

SUPPORT INFORMATION

- Need help? Feel free to send us an email at support@drprepare.com
Want to see more products? Visit the website drprepare.com