GRAPHENE LFP_12V_100A_Solar

GRAPHENE 12 Volt 100AH Lithium ion Smart Battery & Solar Lithium Inverter User Manual

Model: LFP_12V_100A_Solar

1. Introduction

This manual provides essential information for the safe and efficient operation of your GRAPHENE 12 Volt 100AH Lithium ion (LFP C100) Smart Battery and Solar Lithium Inverter. Please read this manual thoroughly before installation and use to ensure optimal performance and longevity of your system.

The GRAPHENE system combines a high-capacity LiFePO4 lithium battery with an integrated Battery Management System (BMS) and a pure sine wave inverter, designed for reliable power backup and solar integration.



Figure 1: GRAPHENE 12V 100AH Smart Battery and Solar Inverter Unit. This image shows the compact design of the inverter and the lithium battery, highlighting their modern appearance.

2. Product Features

- **High Capacity & Efficiency:** 1280 Watt-hour LiFePO4 lithium battery with integrated BMS and a 900VA (650 Watt) pure sine wave inverter.
- **Silent Operation:** Designed to deliver power without fan humming noise.
- **Easy Installation:** Features plug-and-play connectors for straightforward setup.
- **Comprehensive Monitoring:** LCD display provides real-time information on UPS inverter and lithium battery status.
- **Long Lifespan:** Up to 20 years of maintenance-free usage.
- **Fast Charging:** Can be fully charged in 2-3 hours.
- **Deep Discharge Support:** Supports 95% Depth of Discharge for extended backup, even in cloudy weather conditions.
- **Eco-Friendly:** Zero maintenance and no acid fumes.
- **Solar Compatible:** Works with PWM technology for solar panel integration.

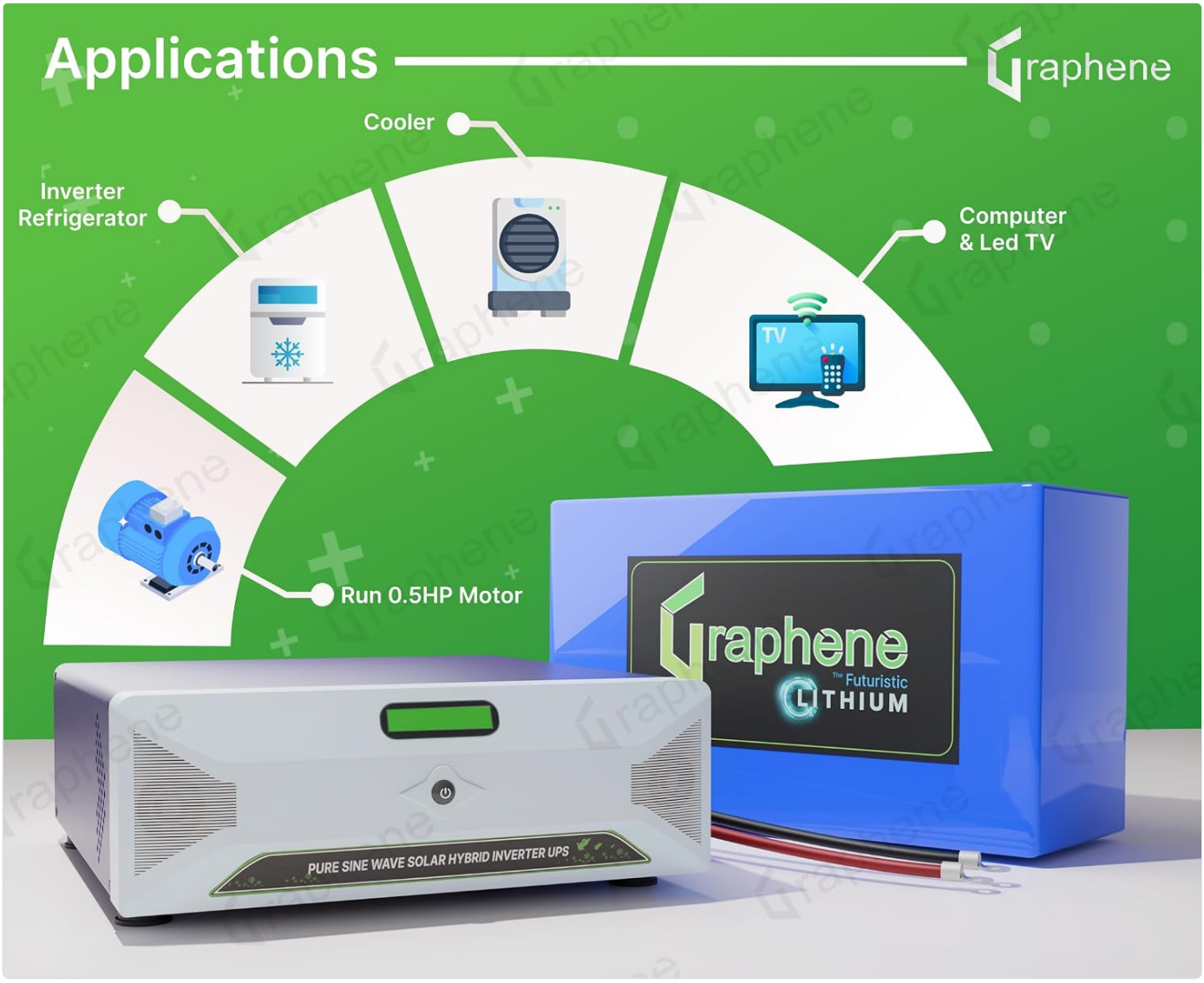


Figure 2: Key Features of the GRAPHENE System. This image visually highlights benefits such as zero maintenance, fast charging, long life, eco-friendliness, and solar compatibility.

3. Setup and Installation

3.1 Unpacking

Carefully unpack all components from the box. Verify that all items listed in the "What's in the Box" section (Section 9) are present and undamaged. If any items are missing or damaged, contact customer support immediately.

3.2 Placement

- Place the inverter and battery in a cool, dry, and well-ventilated area.
- Ensure adequate clearance around the unit for proper airflow.
- Avoid direct sunlight, heat sources, and moisture.
- Keep away from flammable materials.

3.3 Connections

The system is designed for plug-and-play installation. A local electrician can assist, or you can follow these general guidelines:

1. Connect the battery to the inverter using the provided cables. Ensure correct polarity (positive to positive, negative to negative).

2. Connect the inverter to your home's main power supply.
3. If using solar panels, connect them to the inverter's designated solar input terminals. The system is compatible with PWM technology.
4. Connect your appliances to the output sockets of the inverter.

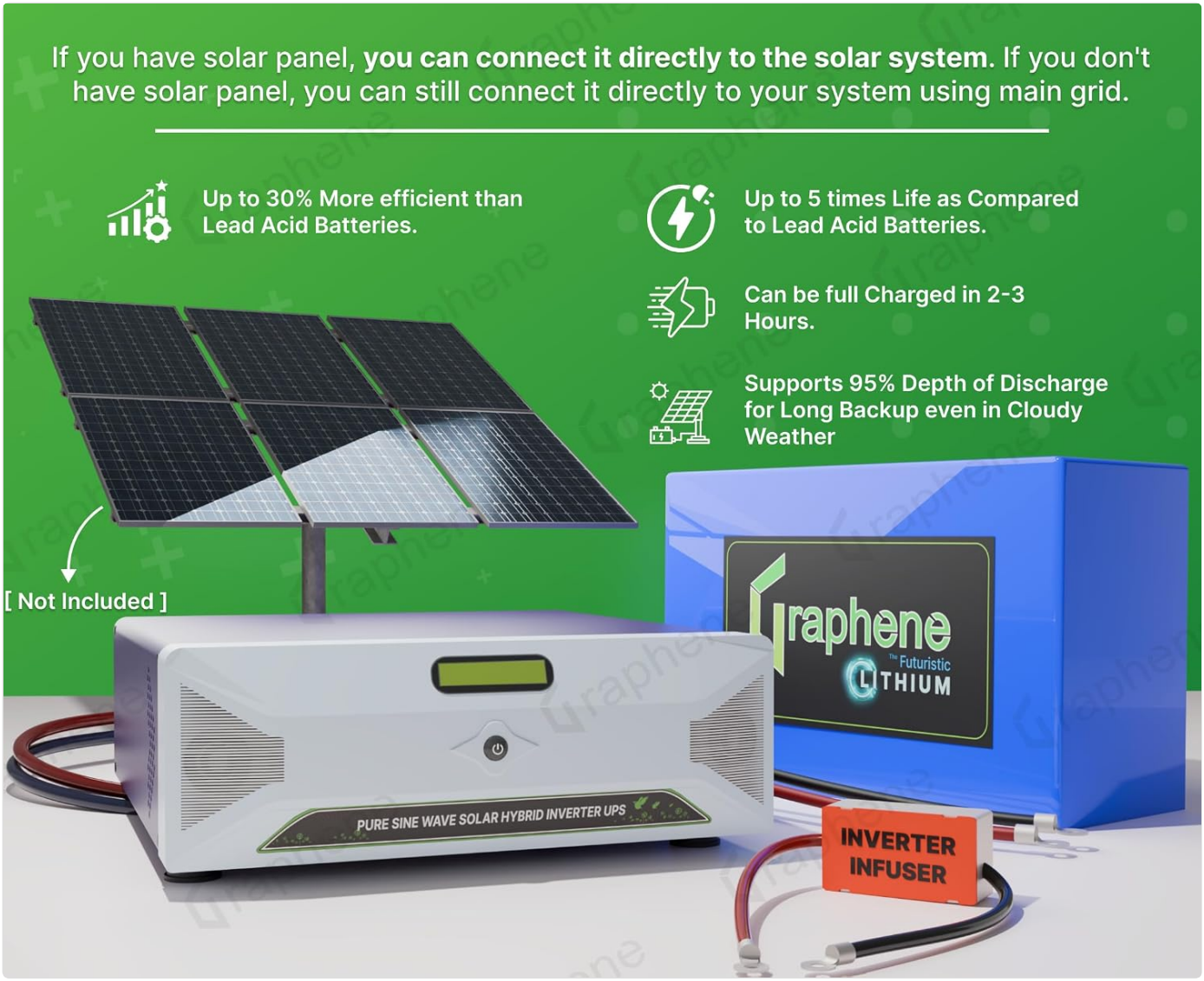


Figure 3: Solar Panel Connection Diagram. This illustration demonstrates how the GRAPHENE system can be connected to solar panels or directly to the main grid for charging and operation.

4. Operating Instructions

4.1 Powering On/Off

- To power on, press and hold the power button on the inverter until the LCD screen illuminates.
- To power off, press and hold the power button again until the LCD screen turns off.

4.2 LCD Display and Monitoring

The LCD display provides critical information about the system's status:

- **Battery Voltage:** Displays the current voltage of the lithium battery.
- **Charging/Discharging Current:** Shows the current flow into or out of the battery.
- **Remaining Battery Status (SOC):** Indicates the State of Charge as a percentage.
- **Battery Load Monitoring:** Provides insights into the power consumption.

- **Battery Life & Usage Indication:** Tracks cycles and other vital statistics.



Figure 4: Smart Monitoring App Interface. This image illustrates the user-friendly interface of the mobile application, showing various parameters like SOC, voltage, current, and battery vitals. The app is available for both iOS and Android devices.

4.3 Load Capacity and Backup Time

The following table provides estimated backup times for various appliance configurations:

Appliances	Backup Time
2 Fan, 3 LED lights	7-10 Hours
2 Fan, 4 LED lights, 1 LED TV, 1 Wifi Router, 1 water Purifier, 1 Refrigerator	4-7 Hours
3 Fan, 5 LED lights, 1 LED TV, 1 Laptop, 1 Wifi Router	3-5 Hours
3 Fan, 5 LED lights, 1 LED TV, 1 Laptop, 1 Wifi Router 1 Refrigerator	3-4 Hours
4 Fan, 4 LED lights, 2 LED TV, 1 Laptop, 1 Wifi Router	3-5 Hours
6 Fan, 10 LED lights, 3 LED TV, 1 Laptop, 1 Wifi Router	2-3 Hours
1 Mixer Grinder (up to 700 Watts)	1-3 Hours
1 Half HP Water Pump/Motor	2-3 Hours

Appliances	Backup Time
1 Washing Machine (without heater)	2-3 Hours

Table 1: Estimated Backup Times. These times are approximate and may vary based on appliance wattage, battery age, and environmental conditions.

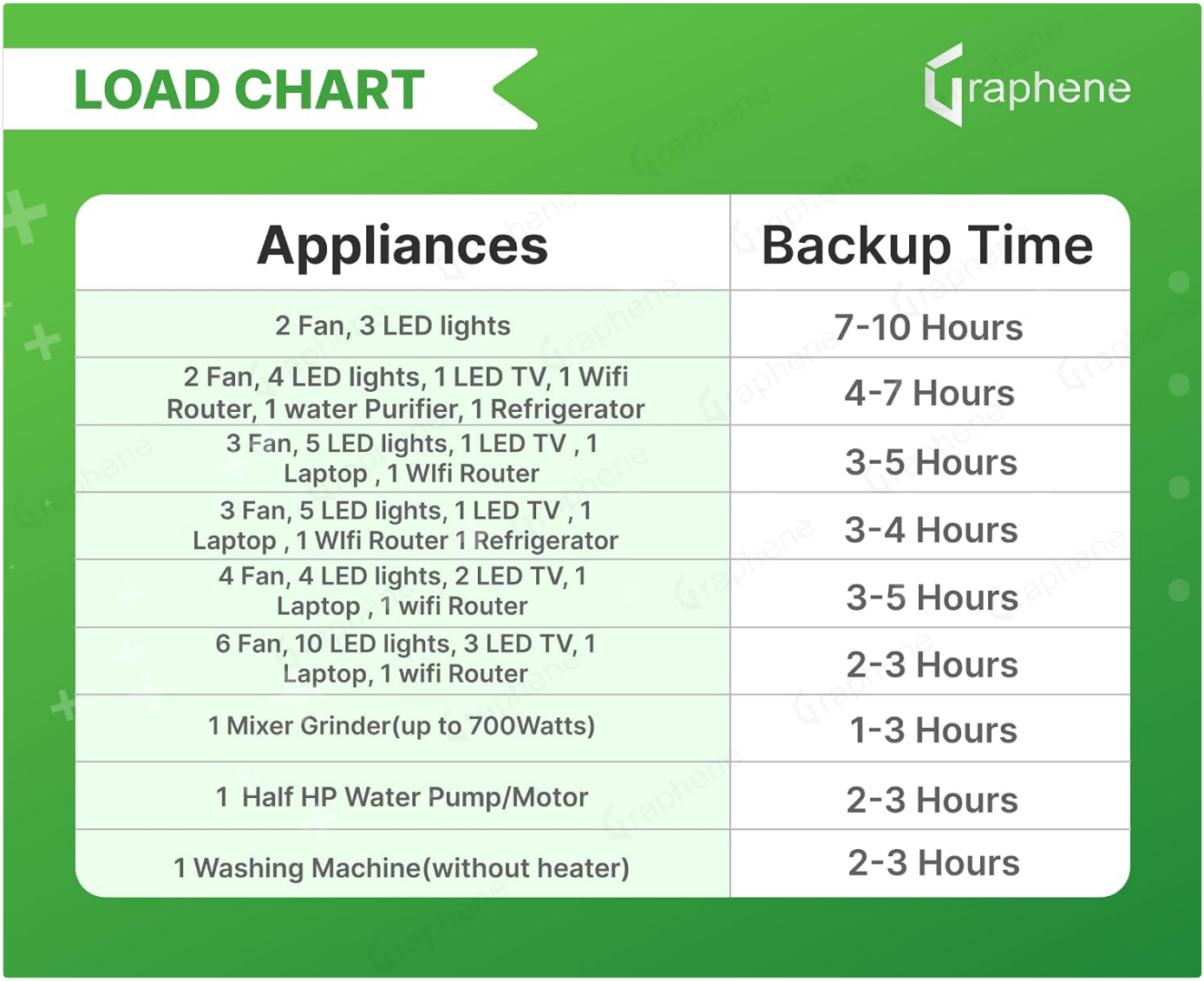


Figure 5: GRAPHENE Load Chart. This visual representation of the load chart provides a quick reference for expected backup durations with various household appliances.

5. Maintenance

The GRAPHENE Lithium ion Smart Battery and Solar Inverter system is designed for minimal maintenance, offering up to 20 years of maintenance-free usage. However, periodic checks are recommended to ensure optimal performance:

- **Cleanliness:** Keep the inverter and battery free from dust and debris. Use a soft, dry cloth for cleaning. Do not use liquid cleaners.
- **Ventilation:** Ensure that the ventilation openings on the inverter are not blocked to prevent overheating.
- **Connections:** Periodically check all cable connections to ensure they are secure and free from corrosion.
- **Environmental Conditions:** Ensure the operating environment remains within the recommended temperature and humidity ranges.

Note: There is no need for water topping or acid level checks as with traditional lead-acid batteries.

6. Troubleshooting

This section provides solutions to common issues you might encounter. For problems not listed here, please contact GRAPHENE customer support.

Problem	Possible Cause	Solution
Inverter not turning on	Battery not connected or discharged; Power button not pressed correctly; Main power supply issue.	Check battery connections; Ensure battery is charged; Verify main power supply; Press and hold power button firmly.
No power output to appliances	Overload; Output circuit breaker tripped; Inverter fault.	Reduce connected load; Reset circuit breaker; Contact customer support if issue persists.
Battery not charging	Main power supply issue; Solar panel issue (if applicable); Charging cable loose or damaged.	Check main power; Inspect solar panel connections and sunlight; Ensure charging cables are secure.
Unusual noises or smells	Internal component issue; Overheating.	Immediately power off the unit and disconnect from power. Contact customer support. Do not attempt to repair.

Table 2: Common Troubleshooting Steps. Always prioritize safety when troubleshooting electrical devices.

7. Specifications

Attribute	Value
Brand	GRAPHENE
Model Number	LFP_12V_100A_Solar (Based on current product variant)
Battery Type	LiFePO4 Lithium ion (LFP C100)
Battery Capacity	100 Amp Hours
Inverter Type	Pure Sine Wave Solar Hybrid Inverter UPS
Inverter VA Rating	1250 VA (PWM) / 900VA (650 Watts)
Wattage	650 Watts
Power Source	Battery Powered
Item Weight	20 kg
Item Dimensions (LxWxH)	66 x 26 x 41 Centimeters
Included Components	1 LFP Battery, 1 UPS Inverter 650 Watts
Recommended Uses	Home UPS and Inverter

Table 3: Product Specifications. Specifications are subject to change without notice.

8. Warranty and Support

8.1 Warranty Information

The GRAPHENE 12 Volt 100AH Lithium ion Smart Battery and Solar Lithium Inverter comes with a**5-year warranty**. This warranty covers manufacturing defects and ensures long-term reliability. Please retain your purchase receipt for warranty claims.

Extended warranty options may be available for purchase. Refer to your retailer or the GRAPHENE website for details.

8.2 Customer Support

GRAPHENE provides comprehensive customer support and onsite service across India. For any queries, technical assistance, or service requests, please contact us:

Toll-Free Number: **91385 11010** (Available 24/7)

Onsite Service: All India Onsite Service and Support available, including remote and rural areas.

Customized Solutions: We offer customized solutions for solar systems, lithium batteries, and inverters to meet specific requirements.



Figure 6: GRAPHENE 24/7 Customer Care Support. This image highlights the availability of customer support and the contact number for assistance.



Figure 7: GRAPHENE All India Onsite Service. This image depicts a service technician, emphasizing the availability of doorstep service and support across India.

9. What's in the Box

- 1 x GRAPHENE LFP Battery (12V, 100AH)
- 1 x GRAPHENE UPS Inverter (650 Watts)
- User Manual (This Document)
- Connection Cables

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Ask a question about this manual

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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