ExpertPower CLBX48V6.5I1P8

ExpertPower 4320W Solar Power System Kit: User Manual

Model: CLBX48V6.5I1P8

This manual provides instructions for the installation, operation, and maintenance of your ExpertPower 4320W Solar Power System Kit, featuring a 6.5KW Hybrid Solar Inverter and 540W Bifacial Solar Panels.

1. Product Overview

The ExpertPower 4320W Solar Power System Kit is designed to provide energy independence through solar power generation and storage. It includes a 6.5KW Hybrid Solar Inverter with a 120A MPPT Solar Charge Controller and eight 540W Bifacial Solar Panels. This system is capable of integrating with grid power for pass-through capabilities and can power various residential or commercial applications.



Image 1.1: Overview of the ExpertPower 4320W Solar Power System Kit, showing the hybrid inverter and eight solar panels.

1.1 Key Features

- **Solar System Package:** Includes eight 540W Solar Panels and one 6500W Hybrid Solar Inverter with a 120A MPPT Solar Charge Controller. (Note: Battery, wiring cables, fuses, breakers, connectors, and panel mounting brackets are not included.)
- **Cohesive Solar Energy Generation:** High-efficiency bifacial solar panels harness sunlight from both sides, channeling power through the hybrid solar inverter to power loads and charge battery banks.
- **UL1741 Standard Compliance:** The 6.5KW Hybrid Solar Inverter provides a pure sine wave AC output of 120V, adhering to UL1741 standards. It features a built-in MPPT solar controller with an 8000W max. solar input and a 120A battery charger, supporting two 4000W PV inputs up to 500V open circuit voltage.
- **Versatile Intelligent Inverter:** Supports up to 6 inverters in parallel for a total output of 39KW. Configurable for 120V single-phase, 120V/240V Split Phase (two inverters required), or 208V 3-Phase (three inverters required).
- **Enhanced Power Production:** Bifacial solar panels are engineered to capture more sunlight and generate additional power compared to traditional single-face panels.

2. System Components and Diagram

This section details the main components of your solar power system and illustrates how they integrate to form a complete energy solution.



Image 2.1: Illustration of a complete solar power system, demonstrating the integration of solar panels, inverter, battery bank, breaker box, utility power, and an optional generator for a residential setup.

2.1 Inverter Overview

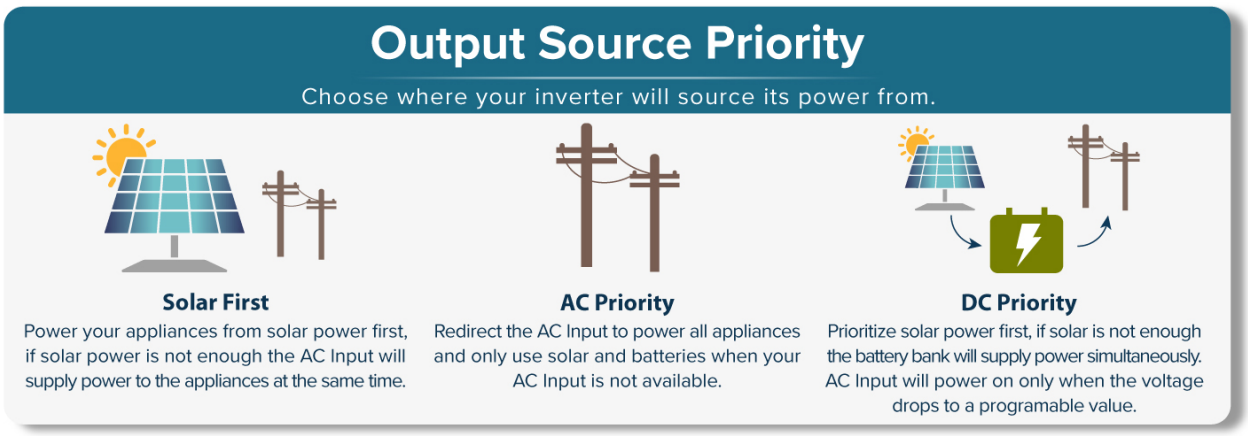


Image 2.2: Detailed diagram of the 6.5KW Hybrid Solar Inverter, highlighting its detachable display, function buttons, LCD display, charging indicator, status indicator, fault indicator, power on/off switch, RS-232, BMS, and USB communication ports, along with AC input/output, PV, and battery connectors.

2.2 Bifacial Solar Panels

The kit includes 540W bifacial solar panels, designed to capture sunlight from both the front and rear surfaces, increasing energy yield.

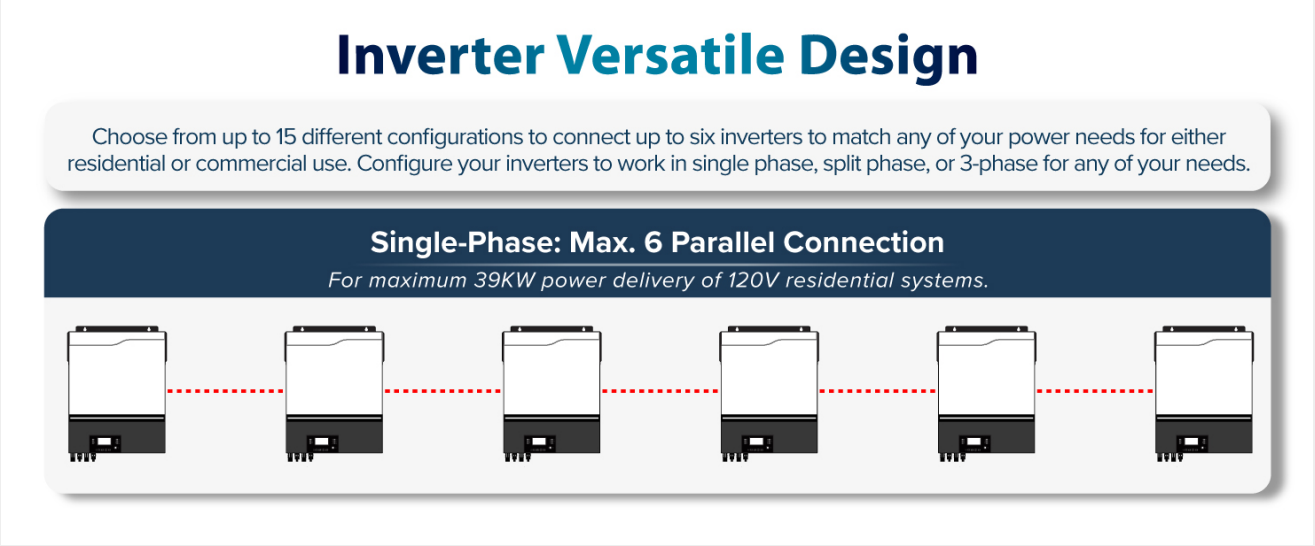


Image 2.3: Illustration demonstrating the bifacial solar panel technology, showing how it captures both direct sunlight and reflected/diffused sunlight from its rear side, leading to increased energy production. Key specifications for the 540W panel are also displayed.

3. Setup and Installation

Proper setup is crucial for the safe and efficient operation of your solar power system. It is highly recommended that installation be performed by a qualified professional.

3.1 Safety Precautions

- Always disconnect all power sources (solar, battery, grid) before performing any installation or maintenance.
- Ensure proper grounding of all components.
- Wear appropriate personal protective equipment (PPE), including insulated gloves and safety glasses.
- Do not attempt to open or repair the inverter or solar panels yourself. Refer to qualified service personnel.

3.2 System Wiring Overview

The system involves connecting solar panels to the inverter, the inverter to a battery bank (not included), and the inverter to your home's electrical panel, with options for grid and generator input.

1. **Solar Panel Connection:** Connect the solar panels to the PV input connectors on the inverter. Ensure correct polarity and voltage/current limits are observed. The inverter supports two 4000W PV inputs, each up to 500V open circuit voltage.
2. **Battery Connection:** Connect your 48V battery bank (not included) to the battery connectors on the inverter. Ensure correct polarity. The inverter is compatible with LifePO4/Lithium, AGM/SLA, Gel, and Flooded batteries.
3. **AC Input/Output:** Connect the inverter's AC output to your home's electrical panel. If integrating with grid power or a generator, connect these to the AC input connectors.
4. **Parallel Connection (Optional):** For increased power output, up to six inverters can be connected in parallel. Refer to the "Versatile Design" section for configuration options (Image 3.1, 3.2).

3.3 Inverter Configuration Options

The inverter offers flexible configuration for various power needs, including single-phase, split-phase, and 3-phase setups.

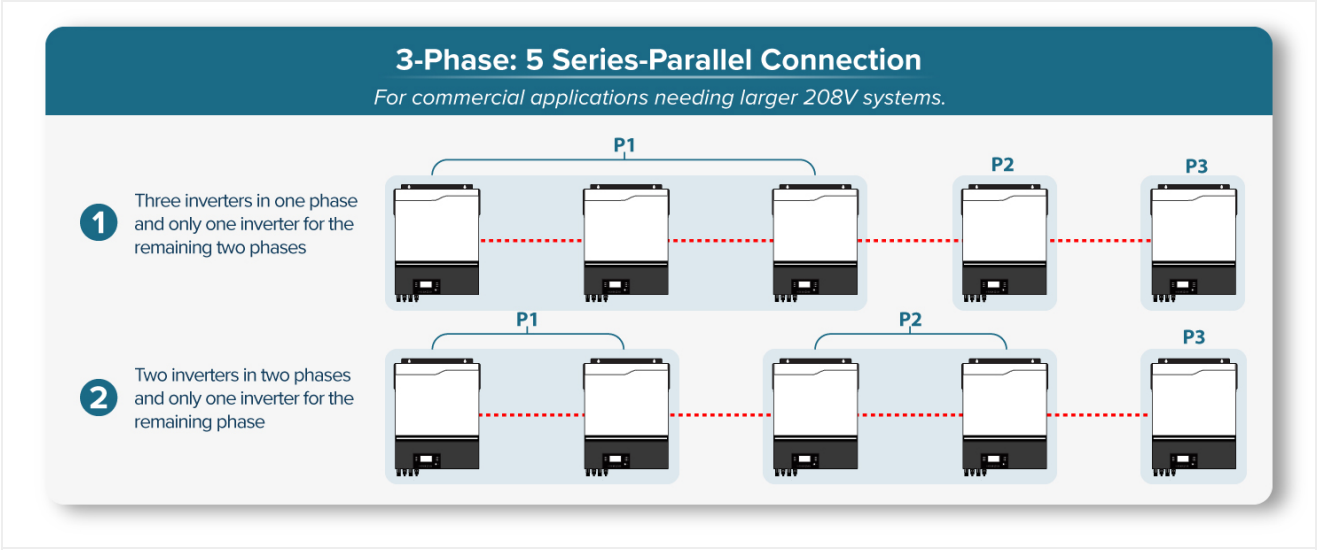


Image 3.1: Single-Phase Parallel Connection: Illustrates connecting up to six inverters in parallel for a maximum 39KW power delivery in 120V residential systems.

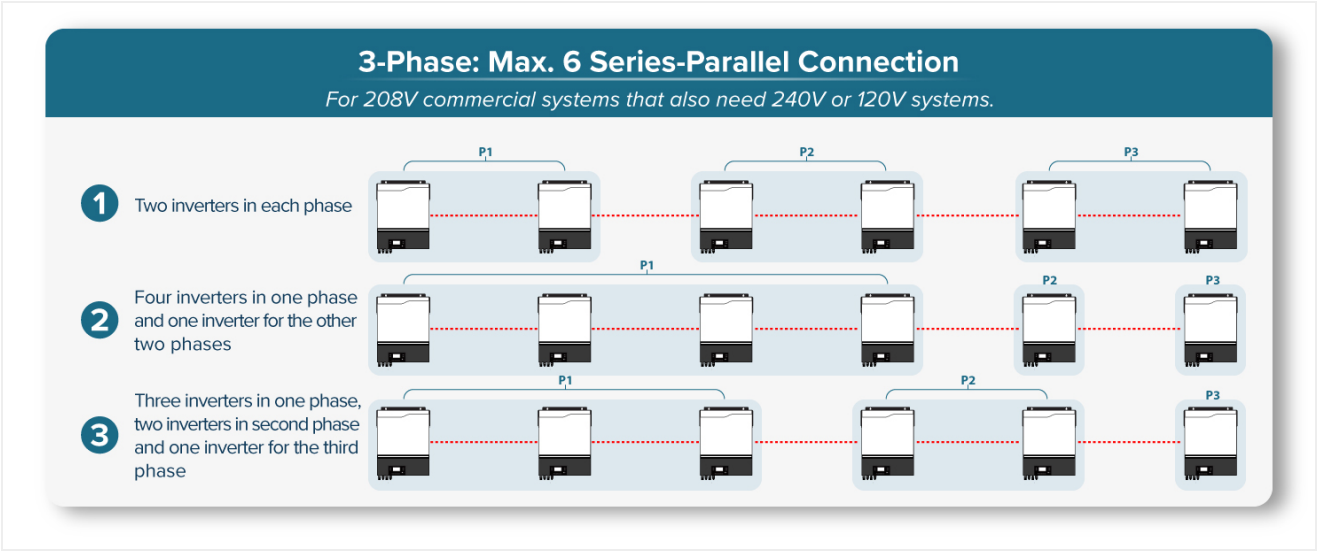


Image 3.2: Split-Phase Series and Parallel Connection: Shows configurations for up to six inverters for 240V and 120V systems, suitable for large residential applications. This includes one inverter per phase, two inverters per phase, and up to six inverters in two groups of three parallel.

4. Operating Instructions

This section covers the operational aspects of your ExpertPower Solar Power System, including power priorities and monitoring.

4.1 Charging Priority Settings

The inverter allows you to control how the battery bank is charged from different power sources.

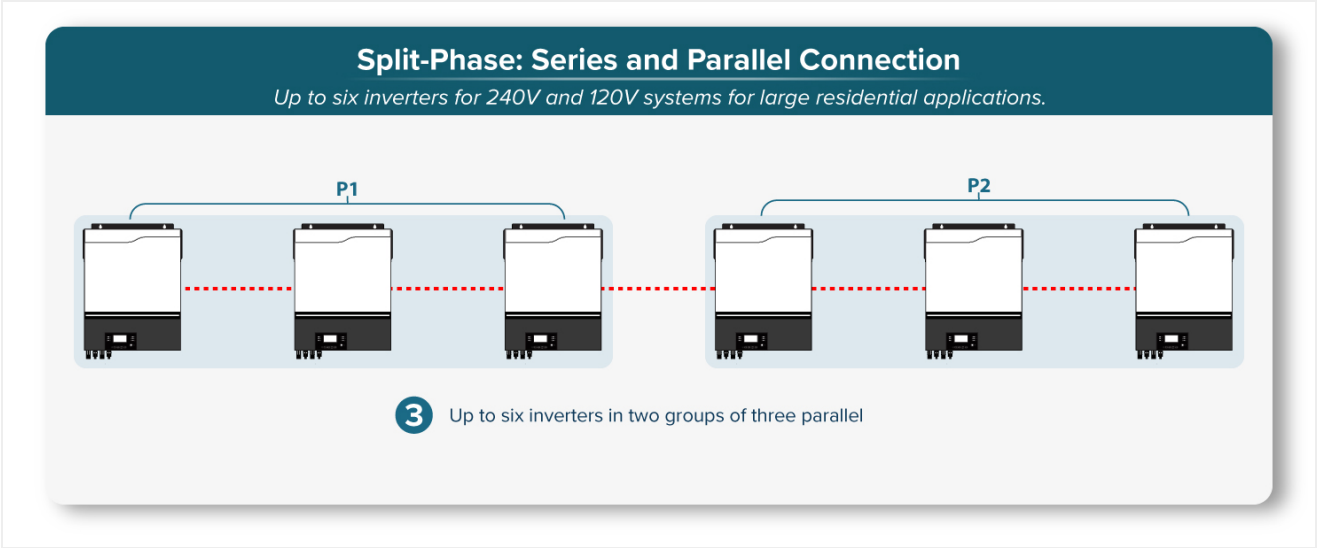


Image 4.1: Charger Source Priority: Illustrates options for charging the battery bank.
Solar First: Solar panels charge the battery bank first; AC input charges only if solar power is unavailable.
Solar and AC Input Simultaneously: Solar energy and utility power charge the battery bank at the same time.
Solar Only: Solar energy is the only charging source, regardless of AC input availability.

4.2 Output Source Priority Settings

Configure how your inverter sources power for your appliances to ensure continuous operation.

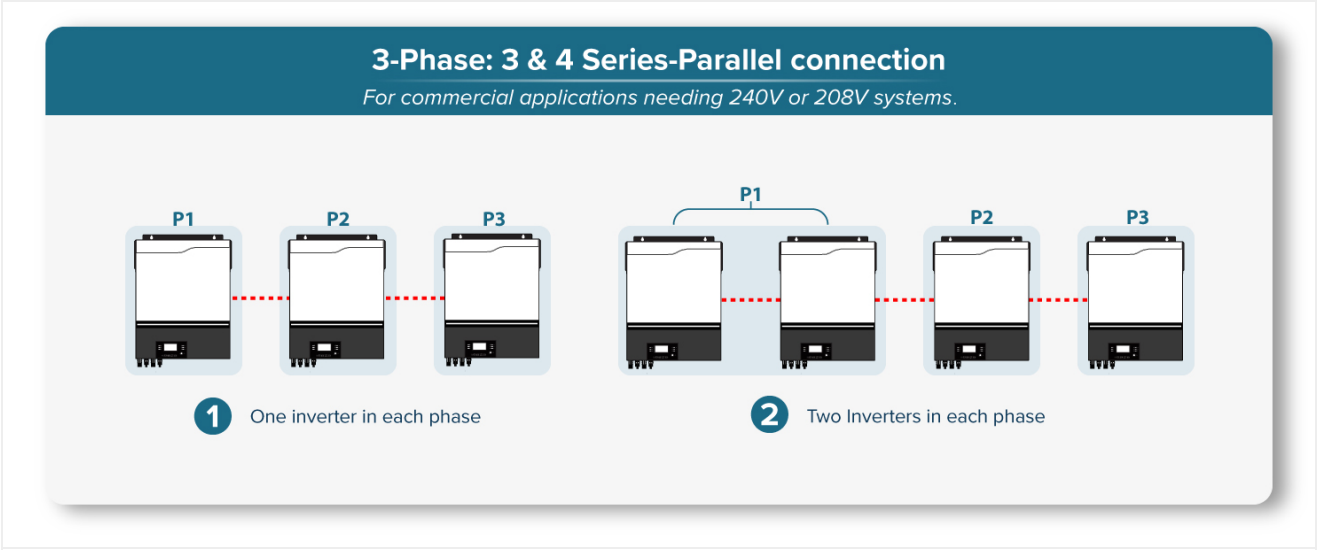


Image 4.2: Output Source Priority: Illustrates options for how the inverter supplies power to loads.
Solar First: Power from solar first; AC input supplies power if solar is insufficient.
AC Priority: Redirects AC input to power all loads, using solar and batteries only when AC input is unavailable.
DC Priority: Prioritizes solar power first; if insufficient, the battery bank supplies power simultaneously. AC input powers on only when battery voltage drops to a programmable value.

4.3 Wi-Fi Monitoring

The hybrid inverter features built-in Wi-Fi transmitters, allowing you to monitor your system remotely via the WatchPower Wi-Fi App. Registration is required.

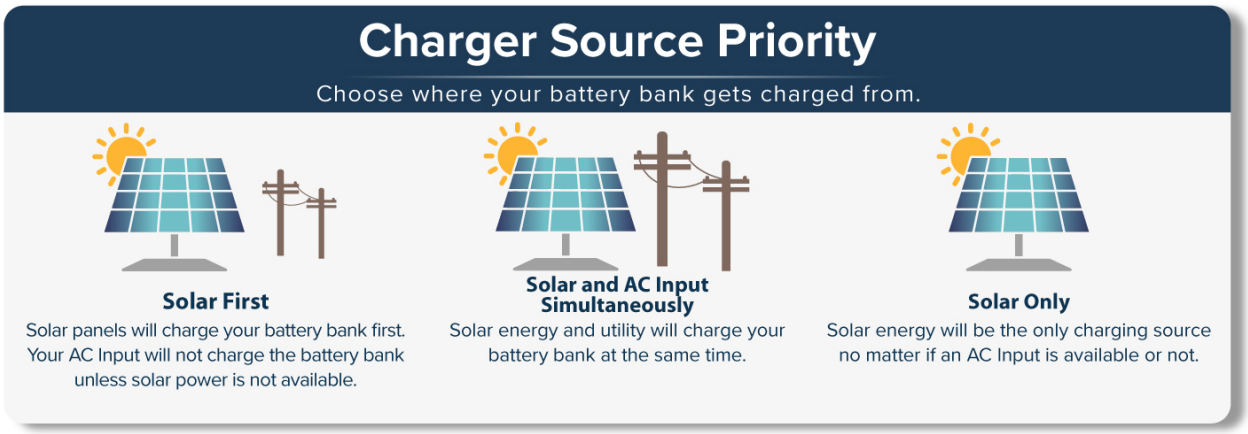


Image 4.3: WatchPower Wi-Fi App Interface: Screenshots showing the mobile application's interface for monitoring the hybrid inverter, including basic information, product information, history, and an energy overview in both line and battery modes.

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Video 4.1: An animated overview of the ExpertPower Solar Panel Power System Kit, demonstrating how solar panels, batteries, and the inverter work together to power a home, with options for grid integration. This video highlights the system's ability to reduce carbon footprint and provide energy independence.

5. Maintenance

Regular maintenance ensures the longevity and optimal performance of your solar power system.

- **Solar Panels:** Periodically clean the surface of the solar panels to remove dust, dirt, and debris that can reduce efficiency. Use a soft cloth and water. Avoid abrasive cleaners.
- **Inverter:** Ensure the inverter's ventilation openings are clear and free from obstructions to prevent overheating. Check for any visible damage to the casing or cables.
- **Connections:** Annually inspect all electrical connections for tightness and signs of corrosion. Loose connections can lead to power loss or safety hazards.
- **Battery Bank (if applicable):** Follow the manufacturer's maintenance guidelines for your specific battery type. This may include checking electrolyte levels (for flooded batteries) or monitoring battery health via the inverter's display or app.
- **Professional Inspection:** Consider having a qualified solar technician perform a comprehensive system inspection every 1-3 years.

6. Troubleshooting

This section provides general guidance for common issues. For complex problems, contact ExpertPower customer support.

- **No Power Output:**
  - Check if the inverter is turned on.
  - Verify all circuit breakers are in the "ON" position.
  - Ensure solar panels are receiving adequate sunlight.
  - Check battery connections and charge level.
  - Inspect AC input/output connections.
- **Low Power Production:**
  - Clean solar panels to remove dirt or shading.

- Check for any partial shading on the panels throughout the day.
- Verify all solar panel strings are connected correctly.

- **Inverter Error Codes:**
  - Refer to the inverter's display or the WatchPower app for specific error codes.
  - Consult the detailed inverter manual (if provided separately) for error code definitions and troubleshooting steps.

- **Wi-Fi Monitoring Issues:**
  - Ensure the inverter is within range of your Wi-Fi router.
  - Check your Wi-Fi network connection.
  - Verify the WatchPower app is updated to the latest version.
  - Confirm successful registration and pairing of the inverter with the app.

7. Specifications

Detailed technical specifications for the ExpertPower 4320W Solar Power System Kit.

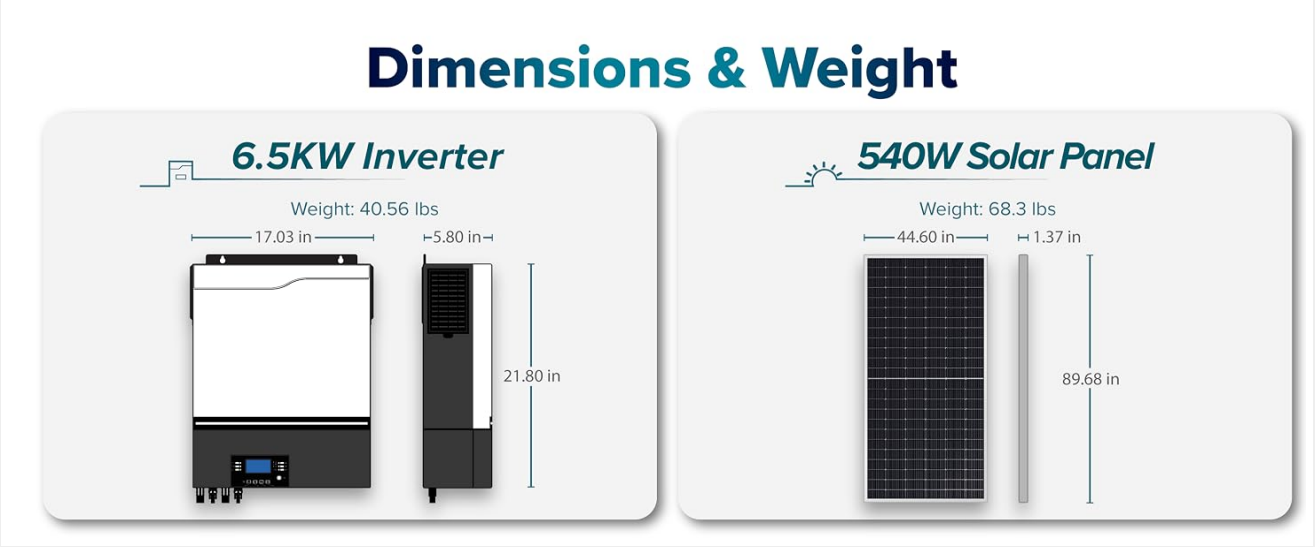


Image 7.1: Technical Specifications: A table detailing the specifications for both the 6.5KW Inverter (Rated Power, Input/Output AC/DC Voltage, Surge Power, Efficiency, PV Input, etc.) and the 540W Solar Panel (Cell Type, Maximum Power, Open-Circuit Voltage, Current, Module Efficiency, System Voltage, Fuse Rating, Mechanical Load).

7.1 Dimensions & Weight

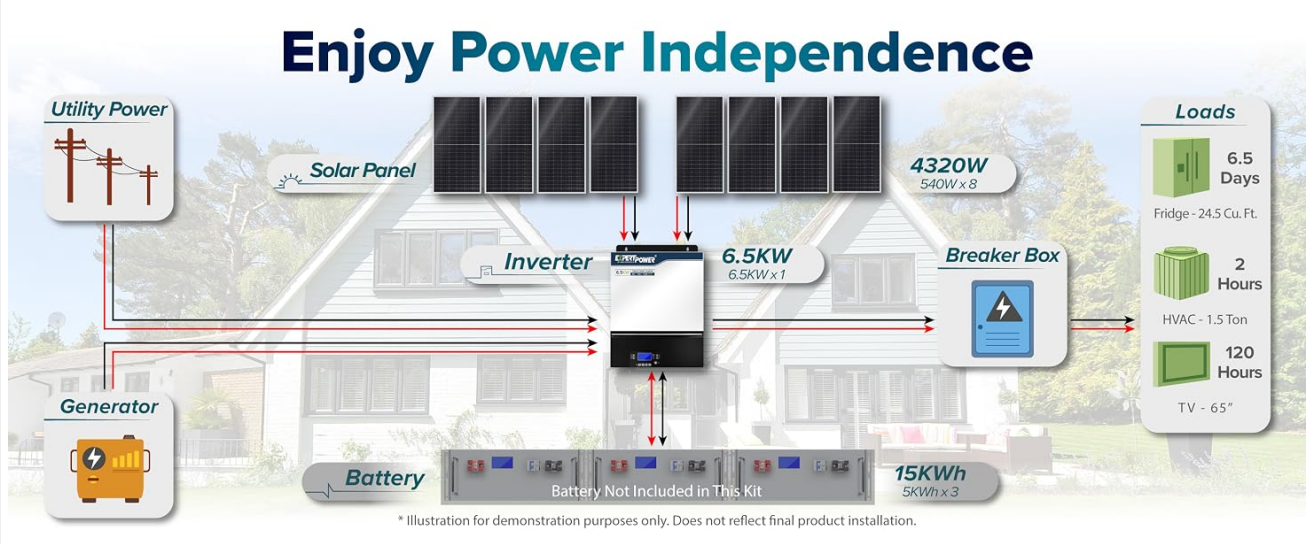


Image 7.2: Dimensions and Weight: Visual representation of the physical dimensions and weight for both the 6.5KW Inverter (40.56 lbs, 17.03 x 5.80 x 21.80 inches) and the 540W Solar Panel (68.3 lbs, 89.68 x 44.60 x 1.37 inches).

7.2 General Product Information

- **Brand:** ExpertPower
- **Model Number:** CLBX48V6.5I1P8
- **Item Weight:** 800 pounds (Total system shipping weight)
- **Product Dimensions (Inverter):** 90 x 45 x 1.2 inches (This dimension appears to be a general system or panel dimension from the source data. Please refer to Image 7.2 for the specific inverter dimensions.)
- **Color:** White
- **UPC:** 840140951738

8. Warranty Information

Specific warranty details for the ExpertPower 4320W Solar Power System Kit are not provided within this manual. Please refer to the warranty card included with your product or visit the official ExpertPower website for comprehensive warranty terms and conditions.

9. Customer Support

For technical assistance, troubleshooting, or further inquiries regarding your ExpertPower Solar Power System Kit, please contact ExpertPower customer support.

- **Online Support:** Visit the ExpertPower Store on Amazon or their official website for FAQs, support resources, and contact information.
- **Contact Information:** Refer to the packaging or included documentation for direct contact methods (phone, email).