

# POWERPAC 1221

## USER GUIDE



Affordable Clean Energy for Anyone, Anywhere™

# WHATS IN THE BOX

## POWERPAC



## SOLAR CHARGE CABLE



## USER MANUAL



## AC CHARGER



# GLOSSARY

The following terms are used in this document to indicate various levels of potential harm that may be caused by improper operation.

## **NOTICE**

The instructions, if not properly followed, may result in property damage and minor physical damage.

## **WARNING**

The instructions, if not properly followed, may result in property damage, major accident and serious injury.

Read the ENTIRE user manual to be familiar with the features of this product before operating. Failure to operate the product correctly may result in damage to the product or personal property and cause serious injury. New Use Energy Solutions, Inc. (NUE) will not assume any legal responsibility. DO NOT use the product with incompatible components or alter the product in any way without following the instructions provided by NUE. Otherwise, you cannot get after-sales service from NUE under warranty condition. These Safety Guidelines include instructions for safety, operation and maintenance. It is important to read and follow all the instructions and warnings in the user manual before assembly, setup or use the product.

1. Keep PowerPac and the accessories dry and do not expose them to high heat.
2. Never disassemble, puncture, shock, crash, or incinerate the product or the accessories.
3. Recycle and dispose of PowerPac in accordance with the local regulations.
4. Pay attention to safety when handling the PowerPac.
5. People with disabilities or children should use the machine under the protection of the supervisor.

# PRODUCT SAFETY GUIDELINES



Improper use may result in fire, property damage or personal injury. Make sure to use the product according to the following safety rules and guidelines.

## Product use:

1. Do not expose PowerPac to any liquid. Keep the PowerPac away from rain or any liquid. Do not drop the PowerPac into water. If the battery in the PowerPac comes into contact with water, it may cause chemical decomposition of the battery. This may cause the battery to catch fire or explode.
2. Never use or charge swollen, leaky, or damaged batteries. If your battery is abnormal, contact NUE support or a NUE authorized dealer for further assistance.
3. Never install or remove a battery from the PowerPac when it is turned on.
4. Never disassemble or pierce the product in any way. Otherwise, it may leak, catch on fire, or explode.
5. DO NOT use the product if it was involved in a crash or a heavy bump.
6. Do not attempt to open or tamper with the internal wiring of the unit. This will void any warranty claims.
7. If the product falls into the water during use, take the product out immediately and put it in a safe and open area. Keep a safe distance from it until it is completely dry. Never use it again and dispose it properly as described in the Battery Disposal section below.
8. Do not allow pins, wires or other metal pieces to insert to the device case, outlets or controls. Metal pieces may short circuit the product causing a fire.
9. Avoid collision. DO NOT place heavy objects next to the unit so that a collision may occur rupturing the unit's case.

## **WARNING Product Charging**

1. Always use the NUE provided charger. NUE takes no responsibility for any damage caused by using non-NUE charger.
2. When charging, please place the product on the ground away from any flammable or combustible materials. To prevent accidents, never leave the PowerPac in an area where it can be tampered with by an untrained individual or falling object, water, etc.
3. The PowerPac's temperature may exceed the charging temperature range of -4°F to 140°F (-20 to 60°C) during long heavy loads. DO NOT charge the PowerPac immediately after a long heavy load (or in any other situation) until it cools down to room temperature.

# PRODUCT SAFETY GUIDELINES

## **Product Storage and Transportation:**

1. Keep the product out of the reach of children.
2. If a low-battery warning appears, charge the battery before storing it. Long-term storage in an uncharged state may cause damage to the PowerPac's batteries. The batteries will enter hibernation mode if the unit is depleted and then stored for a long time. Recharging the product can bring the battery out of hibernation, but storage in hibernation mode will damage the batteries.
3. DO NOT store the product near a heat source, such as a car in direct sunlight, a fire source, or a heating stove.
4. Store the product in dry environments. DO NOT place the product where it may contact with water.
5. Never transport a product with a battery power level higher than 50%. Follow all applicable ground and air transportation regulations. Do not ship unless certified under the applicable ground or air (e.g. DOT (USA), NFMTTC (Canada), IATA (Intl. Air)) laws and under contract for hazmat shipping with your shipper of choice.

## **Battery Disposal:**

1. Dispose of the product at a site approved for lithium ion battery recycling or disposal only after a complete discharge. Batteries are hazardous chemicals. Please strictly follow your local regulations regarding battery disposal. Only dispose of the PowerPac in a location that accepts Lithium Batteries and DO NOT dispose of it in general garbage.
2. Dispose of the product immediately if it cannot be powered on after over-discharging.

## **Product Maintenance:**

1. Never store the product in environments below -4° F (-20°C) or above 140° F (60°C).
2. Battery life may be reduced if not used for a long time.
3. Fully charge and discharge the battery at least once every 3 months to maintain battery health.

## **Travel Notice:**

It is forbidden to carry lithium batteries and equipment with a capacity greater than 160Wh on airplane due to the regulation, THAT INCLUDES THIS UNIT.

## **WARNING:**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

# POWERPAC USE GUIDE

<b>INTRODUCTION</b>	<b>7</b>
<b>FEATURES</b>	<b>8</b>
<b>LCD DISPLAY</b>	<b>12</b>
<b>SOLAR PANEL CONNECTION</b>	<b>13</b>
<b>TECHNICAL SPECIFICATIONS</b>	<b>14</b>
<b>HOW TO RECHARGE</b>	<b>16</b>
<b>FAQs</b>	<b>16</b>
<b>POWERPAC CONTINUOUS USE</b>	<b>18</b>
<b>PRODUCT IMAGES</b>	<b>19</b>

# INTRODUCTION

## **NOTICE:**

Please note:

To turn ON/OFF PowerPac, you need to PRESS & HOLD the Power Button. To turn on the AC power outlet, you need to PRESS & HOLD the AC Button after turning on PowerPac. This is designed purposefully: it will save the battery life, so that your PowerPac's power is available when you need it.

## **Battery Maintenance**

Get to know your PowerPac. Follow this step-by-step introduction to each of PowerPac's ports, buttons, display screens and more.

## **Technical Specifications**

Understanding the specs that make PowerPac such a cutting-edge product.

## **How to Charge PowerPac**

Everything you need to know about recharging your PowerPac via AC charger, solar charge cable.

## **FAQs**

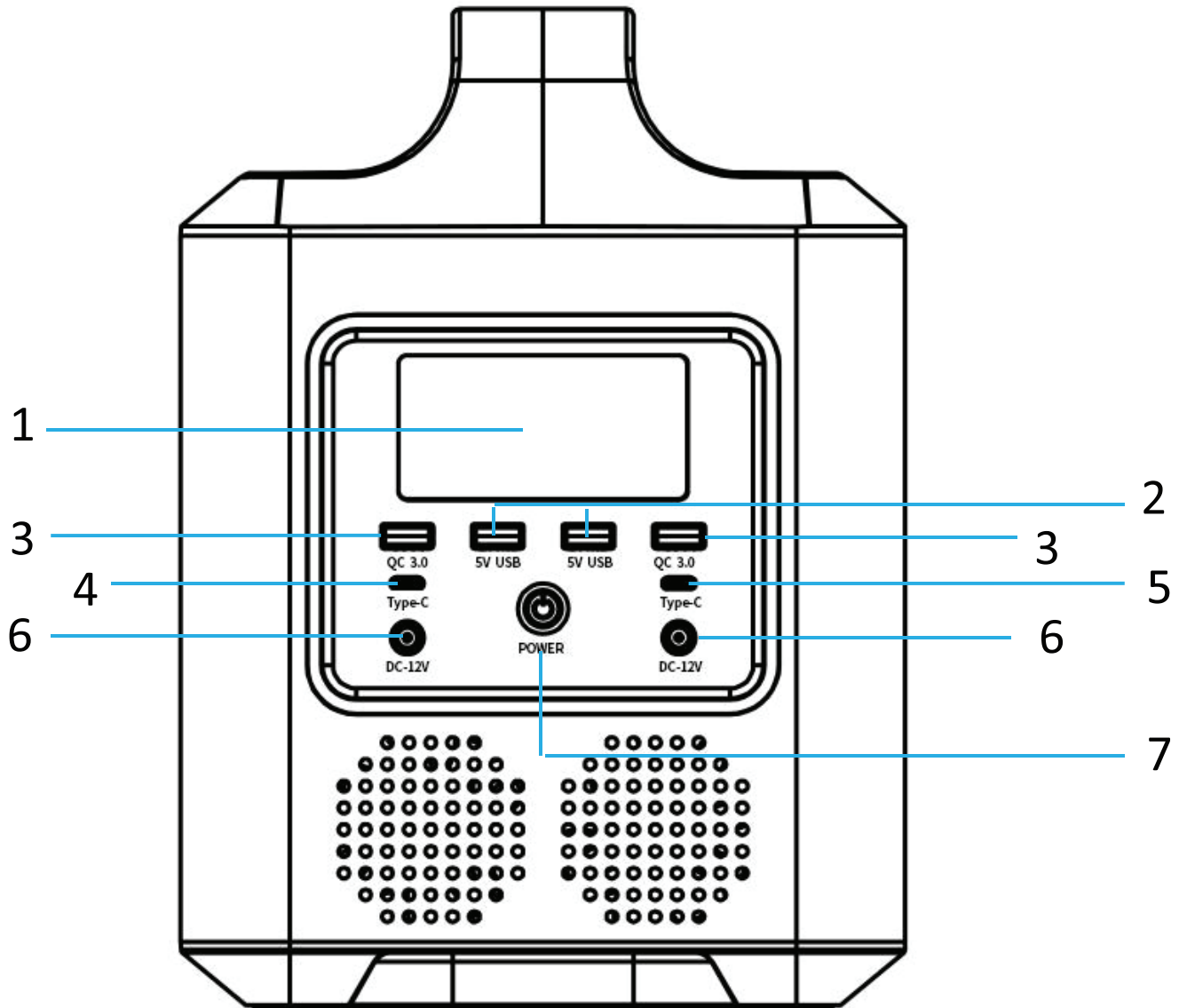
Answers to you some of the most important questions about how to take care of your PowerPac, store your PowerPac, and safely use your PowerPac.

## **What's in the Box:**

What is included in your purchase. If your purchase does not include these items, please contact us at

[www.newuseenergy.com](http://www.newuseenergy.com)

# FEATURES





# FEATURES

## 1. LCD Display

Displays the various conditions of the product. The screen will turn off after 5 mins. You can turn it on by pressing ON/OFF button.

## 2. 5V USB Output Ports

Charge a wide array of devices such as your iPhone, tablet, speakers, or anything that needs to be charged through a USB-A Port. The USB Output icon will appear on LCD Display when a USB port is in use.

## 3. Fast Charge QC 3.0 Output Ports

Charge a wide array of devices such as your iPhone, tablet, speakers, or anything that needs to be charged through a USB Port. The USB Output icon will appear on LCD Display when a USB port is in use. Fast charge enabled devices can be charged at a maximum speed of 18W. If your device does not support fast charging, the device will charge in regular speed.

## 4. Fast Charge Type-C Output Ports

Devices that charge through a Type-C port, such as a MacBook Pro, Android phone, etc. can be charged by the PowerPac Type-C port. The Type-C Output icon will appear on LCD Display when a Type-C port is in use. Fast charge enabled devices can be charged at a maximum speed of 30W. If your device does not support fast charging, the device will charge in regular speed.

## 5. Fast Charge Type-C Output Ports

Devices that charge through a Type-C port, such as a MacBook Pro, Android phone, or other devices can be charged by the PowerPac Type-C port. The Type-C Output icon will appear on LCD display when a Type-C port is in use. Fast charge enabled devices can be charged at a maximum speed of 60W. If your device does not support fast charging, the device will charge in regular speed.

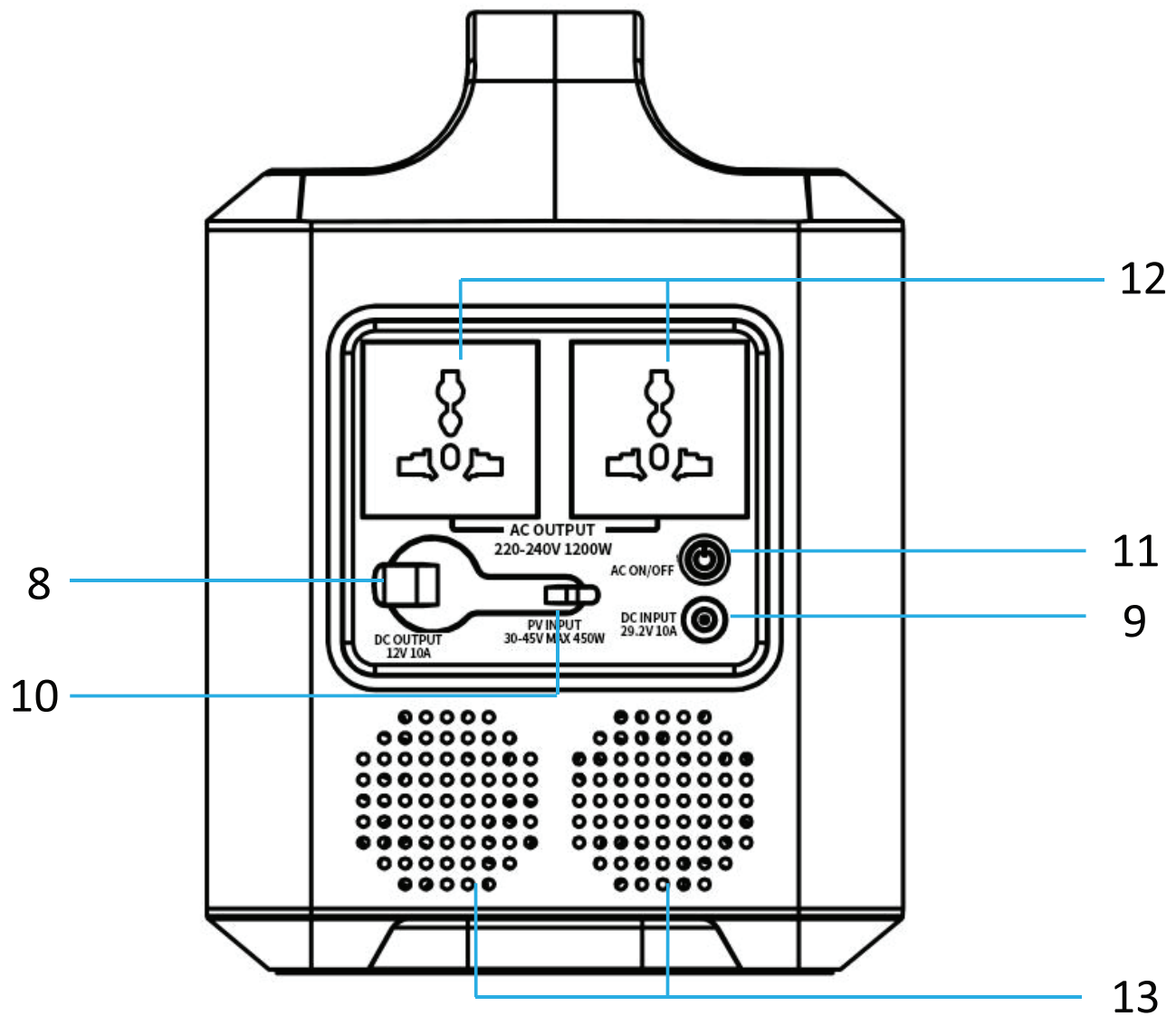
## 6. DC-12V Output Ports

Devices that charge through a DC-12V port, such as a DC12V LED lights and a DC12V Refrigerator, can be charged through this output. The DC Output icon will appear on the LCD Display when a DC port is in use. Devices can be charged at a maximum DC12V 7A.

## 7. Power Switch

Press and short the power button to turn the PowerPac on or off. When the PowerPac is turned on the LCD Display Screen will light up. To turn the LCD Display Screen ON/OFF and keep PowerPac working, press the Power button. The corresponding power load icon will automatically light up when the PowerPac senses any of the output.

# FEATURES



# FEATURES

## 8. Car Outlet

This out charges devices that need car ports to be charged, such as drone batteries. The DC output icon will appear on the LCD Display when a DC port is in use.

## 9. DC Input

The PowerPac needs to be charged by the included charger, and the output voltage specification of the charger is DC 29.2V~ 1-10A.

## 10. Solar Charge

The solar charge controller charges a maximum of 450W of solar power input through either one, or multiple, panels/modules.

## 11. AC ON/OFF Switch

The AC power button controls the AC output of the PowerPac. The AC power needs to be turned on manually. To enable AC power, press the AC power button. The AC Output icon will appear on the LCD display when an AC port is in use. If the AC power is not used for more than 3 minutes, The AC output is automatically turned off.

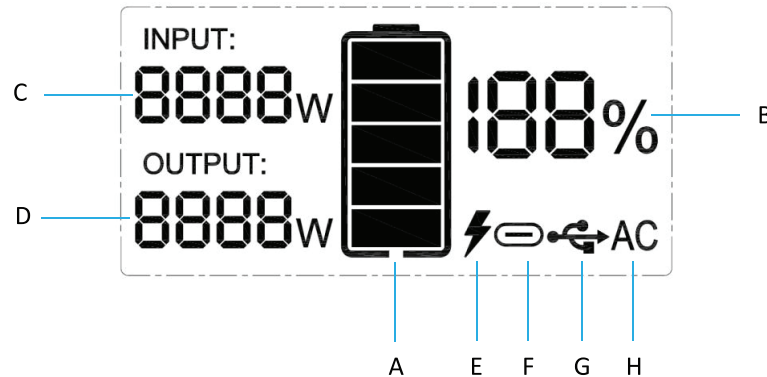
## 12. 2 AC Output Sockets (100-120V reigon or 220-240V reigon)

These outlets can charge devices that require 100-120V AC (220-240V edition) wall chargers to be charged such as laptops, TVs, mini refrigerators, vacuums etc.

## 13. Ventilation Fans

These fans prevent the PowerPac from overheating.

# LCD DISPLAY



## A. Battery Level Display

The battery capacity display has 5 grids, each representing 20% State of Charge (SOC). When the battery quantity display has 1 grid remaining, the remaining battery quantity is < 20%. At that point, charge the PowerPac immediately. Running the PowerPac below 20% SOC regularly may reduce the life of the unit.

## B. Battery Level Mark

A percentage display of the capacity. If it displays 0%, charge the PowerPac immediately.

## C. Power Input

Shows the current input power of the PowerPac in watts.

## D. Power Output

Shows the current output power of the PowerPac in watts.

## E. Charging Input Mark

When the lightning icon is lit, it indicates that the battery pack is charging.

## F. Type-C Output Mark

When the Type-c icon is on, it indicates that type-c is discharging.

## G. USB Output Mark

When the USB icon is on, it indicates that USB is discharging.

## H. AC Output Mark

When the AC icon is on, it indicates that there is AC current discharging.

# SOLAR PANEL CONNECTION

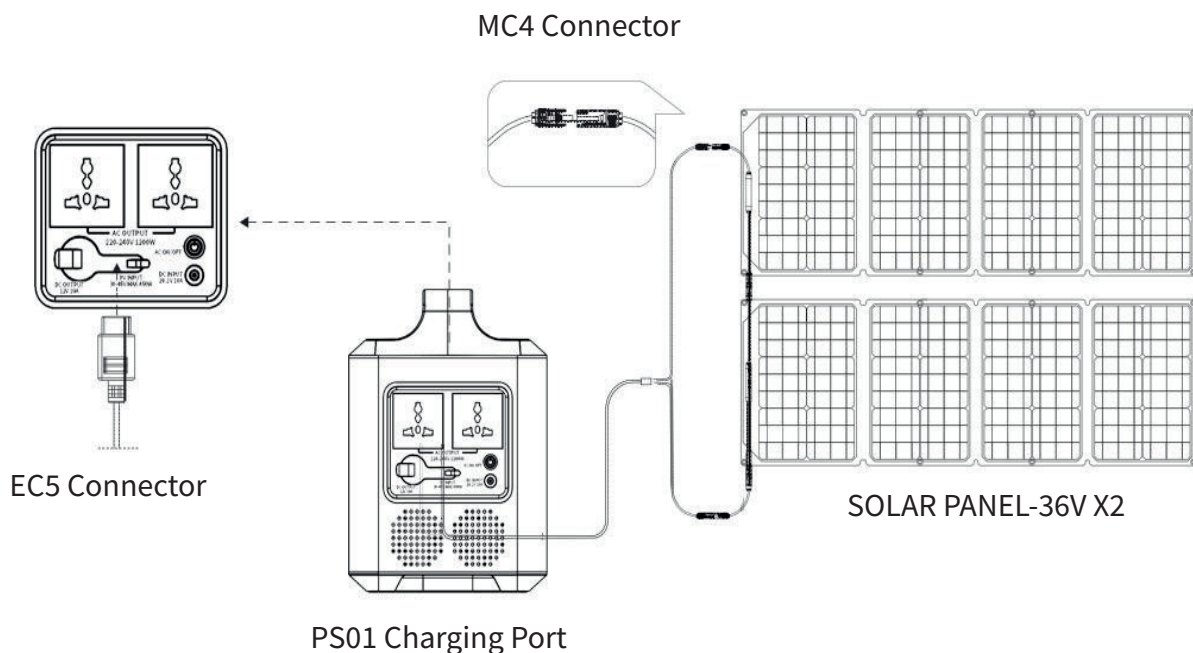
## How to recharge the PowerPac with solar panels?

First, please note that we will focus on how to set up a serial connection (up to three panels and the parallel connection of up to six panels). The PowerPac supports 30-45V DC input. When the input exceeds 45V, the PowerPac's overload protection will be triggered. Excessive voltage may damage the product. Users should follow all the instructions in the manual. NUE does not provide free repair services for any product damage caused by connecting more solar panels than the unit can handle or incorrectly connecting the product: even during the warranty period.

## Recommended serial connection method

- Users can connect 1 to 3 solar panels (with more modules) (do not connect more than 2 in series) in series as shown in the figure below, to the MC4 port.
- Then, connect to MC4 to EC5 conversion cable.
- Use EC5 conversion port connect to the EC5 port on PowerPac.

## SAMPLE CONFIGURATION



Panels with MC4 connectors can power the PowerPac, as long as the voltage and current (30-45V DC, 450 max) the panels will be able to recharge PowerPac through the included MC4 to EC5 conversion cable.

# TECHNICAL SPECIFICATIONS

## General Specs

Net Weight	35.3lbs (16kg)
Dimensions	14.5 x 7.9 x 10.8 inch (L368 x W 200 x H 275mm)
Capacity	2146Wh / 25.6V50Ah
Testing and certification	UL (Cells) CE (Cells) UN38.3 FCC RoHS PSE

## Output

AC Output (x2)	1200W (Surge2400W), 120Vac (60Hz)/230Vac (50Hz)
5V USB Output (x2)	5V DC, 2.4A, 12W Max, per port
QC 3.0 Fast Charge (x2)	5V DC, 9V DC, 12V DC, 2.4A, 28W Max, per port
Type-C Output (x1)	5V 3A DC , 9V 2A DC, 12V 1.5A DC, 18W Max, per port
Type-C Output (x1)	5V DC, 9V DC, 15V DC, 20V DC, 3A, 60W Max, per port
DC 12V Output (x2)	84W,12V DC,7A max
Car Power Output (x1)	94.5W, 13.2V DC, 7A max

## Input

AC Charge Input Voltage	100-120Vac (50Hz/60Hz) ONLY! (International Version220-240Vac ONLY!)
AC Charge Input Power	PowerPac Charge 292W max
Solar Charge Input	450W 30-45V DC 10A continuous 10A max

# TECHNICAL SPECIFICATIONS

## Battery

Cell Chemistry	Solid-state Lithium-ion Battery (SSLi)
Cell Type	3.65V 42AH
Discharge Temperature	-4-140°F (-20-60°C)
Charge Temperature	32-122°F (0-50°C)
Discharge Cut-off Voltage	21V±0.5V
Months Self Discharge	<3%
Efficiency of Charge	100% @0.5C
Charge Voltage	28.8-29.2V
Discharge Current (Peak)	50A (100A 1-3S)
Storage Temperature	0 °C to 45 °C
Highest Solar conversion rate	93%
Shell material and IP Class	ABS+ Aluminum alloy, IP20
Life Span	6,000 Cycles at 80% SOC before failure

# HOW TO RECHARGE

## How do I recharge my PowerPac?

PS01 has an AC charging port and a EC5 and 5525 charging port located on the side of PowerPac can be charged through AC power or solar panel. Besides, you can also use solar panels connect in series (no more than two) and connect the solar charge cable to the EC5 and 5525 solar charging port of PowerPac for charging.

## Can PowerPac power my devices while it's charging?

Yes, the PowerPac can both charge and output power in the same time. When you are charging PowerPac, we do not recommend connecting an electrical appliance with a power over 500W for discharging.

## FAQS

### How do I care for the PowerPac?

If you need to clean PowerPac, please use a dry and non-abrasive cloth to clean the outside surface. You can use cleaners designed for mobile phones or computer screens can to clean PowerPac, but do not give it a bath! DO NOT OPEN THE UNIT OR TRY TO CLEAN THE INSIDE.

### How do I store the PowerPac?

1. Make sure to recharge PowerPac to around 85%.
2. Find and place your PowerPac in a dry environment without by abrasive objects nearby. For optimal battery health, store PowerPac in room temperature.
3. Discharge PowerPac to 30% and then recharge to 85% every 3 months for optimal battery life. This can help prolong the battery life and ensure your PowerPac is ready to recharge the gears at all times.

### How to use the PowerPac safely?

1. Please use PowerPac in its operating temperature range. Using PowerPac outside of its optimal operating temperature range can push the machine beyond its safe and effective limits. Do not submerge your PowerPac in water. It is not waterproofed and this will void your warranty.
2. Do not charge the machine right after it is fully discharged (E.g. 450W keep 120mins). For your safety, please wait 2 to 3 hours for the product to cool down before charging it!
3. If you attempt to charge PowerPac immediately after a full discharge, PowerPac will display as an overheating protection reminder. Please wait 2 to 3 hours for the machine to be cooled down before recharging it.



# FAQS

## How do I access the Device's Bluetooth App?

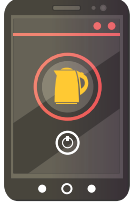
1. Visit the App store on your Iphone or Samsung device.
2. Search for "BAT-BMS".
3. Download the app of that name in the "Utilities" category. Remember to give the app access to your Bluetooth and accessories.
4. Open the app. If your SunCase is nearby, it will appear as a device in the list. If there are multiple SunCases or NUE brand PowerPacs nearby, multiple devices will show up. Please use the serial number (which should be on a sticker on your SunCase) to identify the specific unit you would like to monitor.
5. Connect to the device you would like to monitor.
6. Open that device on the app. You will be given multiple pages. To get accurate up-to-date information check the RT page, which should have information direct from the BMS.



## Do you have any advice on how to best use the Bluetooth App for this device?

1. Remember that the capacity meter displayed on this app is the most accurate meter as it is from the device's BMS. NUE recommends using it whenever possible.
2. On the Control page you can toggle the charging and discharging switch remotely as well. Please do not touch the AutoBalance or Heating State portions for this device.
3. Please do not touch the Parameter settings, so as to ensure the safest use of this unit within the preset parameters.

# POWERPAC CONTINUOUS USE



Cell Phone/Power Tool Charger/  
Led Bulb/Router

Operating hours:  
**Over 100++ Hours**  
Endless with Solar



CPAP Machine/Ventilator/  
Patient Monitor

Operating hours:  
**30 Hours**  
Endless with Solar



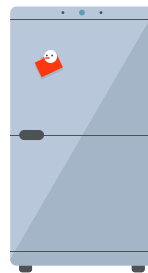
Starlink System/LED TV/Pellet  
Cooker/Small Fridge

Operating hours:  
**18 Hours**  
Endless with Solar



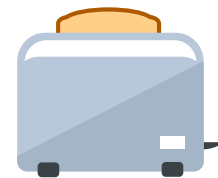
35L per Minute Water Pump/  
5,000 BTU Window Air Conditioner

Operating hours:  
**Up to 5 Hours**



Desktop Computer/  
Large Fridge

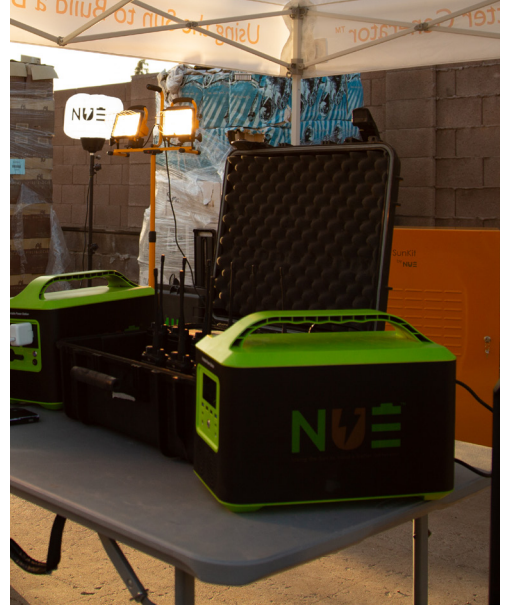
Operating hours:  
**5 Hours**  
Endless with Solar



Toaster Oven/Chain Saw/  
Disc Saw

Operating hours:  
**Up to 9 Hours**

# PRODUCT IMAGES





- 1. Keep the PowerPac and its accessories dry. Do not expose them to high temperatures.**
- 2. Never disassemble, puncture, shock, crash, or incinerate the product or its accessories.**
- 3. Recycle and dispose of the product in accordance with local regulations.**
- 4. Pay attention to safety when handling the PowerPac.**
- 5. People with disabilities or children should use the machine under the protection of a supervisor.**