

ALL TRAVEL ESSENTIALS NEW YORK—TO THE RESCUE

A multi purpose travel essentials company- ALL TRAVEL ESSENTIALS LLC New York has unveiled an innovative plug and play energy storage devices-SCG2500 and SCG2500P PRO that are set to change the way we carry energy and recharge electricity in our homes, cars and business places around in the world.

All travel essentials LLC is a wholesale manufacturing and distributorship company based in New York USA. The company distributes its own designed everyday items needed for safe, convenient and easy travels to millions of customers worldwide. see(www.alltravelessentials.com)

Whether you are moving from one city to the other, or you are outrightly changing living locations across continents; All travel essentials LLC have got your relocation plan covered.

Introducing The new home/business place solar solutions which can be considered energy saving and emergency electricity generators capable of serving medium and large families consistently for as long as 25 to 30 years lifespan depending on usage.

These devices named SCG 2500 Portable power will change the entire narrative of energy storage and emergency energy transportation most especially for Tesla car owners and other electric car drivers.

The SCG2500 and the SCG2500 Pro are the 2 ergonomically designed models out there in the market.

The SCG2500 solar generator pairs a large-capacity rechargeable power station — a big battery, at heart — with a set of portable foldable solar panels, making for a versatile device that can provide backup power for your home during an emergency and do double duty for off-grid activities like camping, tailgating or even DIY projects around your yard. They're safer to store and use and far simpler to maintain than gas generators, and with people more and more conscious of the threat of storms and wildfires, they make a lot of sense for emergency preparedness.

While the SCG2500 Pro comes with extra features and connectors to allow you charge your EV.

Easy to use, packed with the most up-to-date features and battery technology, and expandable enough to serve as a whole-house emergency generator, the SCG2500 Pro beat impressive competitors in testings, emerging as the best large solar generator.

With updated features, an upgrade LiFePO4/LFP battery, a ton of ports and easy expansion, the new SCG 2500 outperformed everything in its class in our testing. It hits the sweet spot for most people who need portable power and a dependable emergency backup.

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It is packed with output ports, make it ideal if you want to charge mobile devices quickly. It is capable of handling most of your small-device power needs, whether it's a laptop, tablet, smartphone, LED lighting unit (it has a built-in lantern as well in case you read at night), BBQ controller, mini refrigerator or small fan.

Functionality doesn't need to mean ugly. The rectangular unit with sharp cut edges and an integrated folding carrying handle looks a bit like an old-school boombox and comes in one color; BLACK, our testing sample was a hue black, and It's small enough, along with a single panel, to keep in a car at all times.

With the speedy recharge rate, even at about 50% efficiency on the panel, we could go from day to night uninterrupted for two consecutive days running a 100-watt load without depleting the unit.

\$1500 for the SCG500 generator and \$2,600 for the SCG2500 Pro with 220W panel at the cost of \$200 only. Available on www.alltravelessentials.com

The SCG2500 PRO even sells a setup meant to address a particularly challenging situation: the EV charging adapter lets you use the NEMA TT-30 30A 125V port with a grounding adapter to charge an electric car. Just be aware that EV batteries are really big, so you can't expect to fill up that easily, at least not right out of the box.. With 1,600W of panels connected, you could fully charge your vehicle in a day or two (perhaps three) if solar conditions are optimal, but it's a bit of a stretch and you wouldn't be able to use it for anything else. But if you're stuck in a snowy cabin with a pooped-out electric vehicle, you should be able to get enough charge to make it to a charging station.

What is a solar generator?

First off, a solar generator isn't really a "generator." It's a large rechargeable battery pack (not that different from the devices you might carry around to charge your phone while traveling), integrating an uninterruptible power supply (UPS) with surge protection and an inverter and line conditioner to power your AC devices.

These devices are known as "solar generators" because they're designed to be charged using a solar panel, making them suitable for long-term use in emergencies or off the grid (they can also be charged from a wall outlet). A wide range of battery capacities are available, from large models that can keep critical appliances going and the lights on during an emergency, to lightweight models more suitable for camping or tailgating.

In order to supply power to a wide range of devices, solar generators offer a variety of AC outlets, 12V DC ports, a standard cigarette lighter port and 5521 barrel-type ports, in addition to Anderson power ports. The more sophisticated, higher-power generators may also have 125V 30A outlets for powering an RV. Some solar generators can directly integrate with home generator transfer panels to power AC circuits.

Solar generators also come with USB ports for charging phones and small devices. The number of USB ports varies from two to four on smaller units and can be as high as six to eight on larger units, with a mix of USB-A 2.4v and 5V ports and USB-C with power delivery (PD) ports from 18W to 100W capacities.

Features of solar generators

In addition to basic watt-hour and inverter capacities, solar generators have different types of ports for connecting various devices. The number of 120V AC ports is typically one or two on smaller units and three to six on medium and larger units. The inverters on the generators themselves, however, have a maximum wattage rating, so nothing stops you from plugging a power strip into a single AC port and using the maximum wattage of the generator.

The inverters on the generators we reviewed are “pure sinewave,” which is the cleanest power you can get from an AC generator. They create a steady, continuous wave of electricity providing a smooth, oscillating current, also known as power conditioning. Some electronics require pure sinewave electricity, such as medical equipment and other appliances with AC motors, pumps and compressors.

Some solar generators have integrated power supplies for fast charging and can be directly connected using cables to external 110V AC and 12V DC power sources. In contrast, others use transformer bricks similar to ones you see on other consumer appliances such as personal computers. A separate power supply typically generates less heat and somewhat lowers the generator’s weight, making the cabling more complicated. The larger units typically also include integrated fans to cool the battery compartment; the battery management system controls them and spins them up and down as needed.

LED and LCDs on these devices display basic data such as state of charge, current wattage output, input and estimated times until charge and depletion (some also have touchscreen user interfaces). Some generators also have wireless capabilities and are managed using a mobile application using Bluetooth and Wi-Fi. The benefit is remote visibility into real-time generator performance from the comfort of wherever you want to view it and alter any settings that may be needed, such as activating and deactivating inverter ports, changing inverter charge speed so as not to overtax a circuit and updating the firmware.

How to choose and use a solar generator

The performance of solar generators is measured in watt hours (Wh). For example, imagine you have a load of 100W (which may be typical of a large fan and a portable refrigerator), and your solar generator's capacity is 1,000 Wh. Then you could keep the load (the fan and portable fridge) for approximately 10 hours before the battery power is depleted (assuming there is no interim recharge by your solar panels, as happens at night).

When operating a solar generator, shield it from the elements somewhere like behind your front door, on a covered porch/patio or inside a vehicle. Some solar panels are rated for continuous outdoor use and are weatherproofed. However, the generators should never be exposed to water, rain or extreme heat. For this reason, we also recommend purchasing extension cables for optimizing generator/panel placement. In our testing, we used 25-foot extensions, so we had a sufficient length between the panels and the generator.

Components of a solar generator

Battery cells

The heart of any solar generator unit, the cell is where chemical energy is stored for use as electrical energy. Cells have used a variety of lithium-based chemical formulations; many batteries have used Lithium-Ion Nickel Manganese Cobalt (NMC) though Lithium Iron Phosphate (LFP), also referred to by its chemical formula LiFePO_4 , has gained popularity in the industry lately since it allows for faster charging and discharging and many more charge cycles and it lasts longer.

NMC batteries are, however, more common, since they are lighter and more energy-dense (and smaller, which is why you see them in smartphones, tablets, smartwatches and portable batteries). However, they have relatively slow charge and discharge rates, which makes them less efficient in use (in the battery world, the measurement of charge speed and rate of depletion/discharge are known as the C rating, and higher is faster).

In addition to having a lower C rating than LFP batteries, Lithium Ion-NMC batteries only have a lifespan of about 500 full charge cycles. In contrast, LFP batteries can handle over 3,000 cycles. LFP batteries also don't generate as much heat as NMC batteries, making them safer and ideal for use in solar generators and electric vehicles.

Battery management system (BMS)

The BMS, a microprocessor-controlled device embedded in the solar generator, combined with software algorithms, ensures the battery's safety and longevity by regulating the charging and discharging of the cells. It accomplishes this by monitoring the voltage and current of each cell in the battery pack and balancing them as needed. The BMS also shuts down the system if it detects an unsafe condition, such as over-voltage or over-temperature.

Inverter

The inverter converts the direct current (DC) output from the batteries and the solar panels to the alternating current (AC) that your home uses (for lamps, appliances and most gadgets). The inverter on a solar generator is rated in output watts (W). A small generator typically has a rating of about 500W, a medium-sized about 1,200W, and a large unit 2,000W or higher.

In other words, the output wattage gives you an idea of how many devices can draw power from the generator simultaneously. A single electric fan might have a maximum draw of 70W, but a hairdryer or a portable induction burner running at maximum power may draw as much as 1,600W to 1,800W and overtax a medium-sized unit. Inverters also handle the combined input wattage from AC and DC power, so your maximum solar panel capacity is determined by the inverter's capacity. If your inverter has a maximum input capacity of 400W, you cannot use more than two 200W panels or four 100W panels.

Solar panel

A solar panel comprises photovoltaic (PV) cells that convert sunlight into direct current (DC) electricity. In a home setup, the DC current is then sent to an inverter, which is converted into alternating current (AC), the type of electricity used in your home. In a solar generator, energy is stored in the battery cells for conversion to AC (or use as DC) later.

Solar panels integrate with solar generators using MPPT (maximum power point tracking) controllers. MPPT is a standard technology that manages the conversion from panel output. Generally speaking, any MPPT-compatible panel from any manufacturer can be used with any solar generator, providing the correct connector cables and adapters are also used (such as Anderson, MC4/PV4, XT-30/XT-60, and various barrel connectors) and that the maximum voltage and combined input wattage into your inverter is not exceeded. However, it is possible to run into cable incompatibilities and capacity mismatches, so we'd recommend you pair panels sold by your generator manufacturer with your generator for the highest compatibility and optimal performance.

A solar panel's performance depends on atmospheric conditions and your panel efficiency; inverters are about 95% efficient. That is: Is the sun shining? Even if you have a panel rated at 100W, you may find that it doesn't work as well in cloudy or hazy weather, or if the panels are not in direct sunlight, or depending on the sun's orientation during the day. Your panels could operate at 50% or less efficiency, maybe 50W.

We never saw any manufacturer's panels performing higher than 80% efficiency during our testing during the South Florida summer, where we had light to medium cloud cover. Therefore, when making recharge calculations against the watt-hour capacity of your generator, assume a panel efficiency of 50% or less, depending on your typical weather conditions.

Solar panels are rated by their power output in watts, and portable panel sizes can range from as small as 50 watts to as high as 400 watts. You'll want to make sure you do not exceed the maximum input capacity of the generator from the panel array; most MPPT charge controllers do not allow you to hook up panels that exceed voltage requirements. Some vendors (such as Goal Zero) will enable you to "oversubscribe" your panel wattage (such as using 1,200W of total capacity when the inverter input capacity is only 600W) during less favorable conditions. However, once the conditions become favorable again, any excess energy is lost as heat.

Depending on its design, a solar generator may be able to accommodate multiple solar panels hooked up in parallel, connected by long cables that use a variety of different types of connectors, which vary by manufacturer. Some panels are of a rugged, heavier, foldable metal design (also referred to as "briefcase"), and others are of a flexible, floppy design. Although they are heavier, these panels are generally easier to set up due to their rigid structure, and a single person can easily set up multiple panels. Briefcase designs are typically outdoor-rated, designed for continuous use and can be rained on without damaging the components.

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All travel Essentials LLC also design its own leather bags, duffel bags and SahndyGO travel bags for women. A Peek into their Brick and mortar store somewhere in Valley stream New York has in array of display of several products that entices travellers and visitors alike to the "city that never sleeps". Some products even have a PEEK into Africa designs. This allows Africans order bespoke clothing items at no extra cost to what is obtainable in their home countries.

Owned by Okeowo Olasubomi Desmond, All travel essentials will change the way we travel, relocate and finally settle down in convenient ways.