



The SunTactics PC5 Solar USB Charger

Introduction

Thank you for your purchase of the SunTactics PC5 Solar USB Charger. This is a very unique high powered solar charger. It is capable of charging USB rechargeable devices directly from the sun. It does not use any internal batteries that can become discharged. It will run a dead cell phone directly from the sun. It utilizes fairly complex circuitry that makes it very simple to use. With proper use and care, the PC5 will provide many years of service.

USB Cables

Most smart phones now come with their own USB connector cable so that they can communicate with personal computers. This is the same cable that can be used to charge your device with the PC5. We found that most of the new phones now use a cable that has a mini or micro USB connector on one end and a standard "A" connector on the other end. If you don't have a cable, you should most likely be able to find your USB cable on the internet or at a local store.

Using the PC5 Solar Charger

Simply unfold the PC5 and place it in the sun with solar cells facing up. The little box on the back has a female USB connector and an LED indicator. The indicator should light up when the solar panel sees light. It will light up even in the slightest sunlight. But in order to get maximum power, the panel should be in full sunlight. Simply plug your USB device into the USB socket on the back of the PC5 using your device's USB "A" type connector (not included). Also note, as the sun moves, the solar panel could eventually get blocked by an obstruction like a tree or a building etc. Try and strategically place it where there will be no obstructions. People walking by are another problem with shading. When they see a solar panel, it is natural to walk up to it and look at it.

Charging Modes

Direct Charging

The PC5 is powerful enough to charge cell phones, smart phones and similar devices directly from the sun. Simply plug the USB "A" type connector into the PC5 and place the PC5 in the sun. Connect the other end of the USB cable into the device to

be charged. Once again, keep the device being charged cool by placing it in the shade. A backpack or purse is a good place if it's not too warm.

Indirect Charging

Another useful feature of the PC5 is its ability to charge stand alone batteries. As long as it's a USB battery it can be charged from the PC5. There are many USB battery packs available on the market. These battery packs are inexpensive and many are less sensitive to heat than your phone or PDA. Plug the battery pack into the PC5 using a USB cable and leave it in the sun to charge. When charging is complete, you can either use it to charge your device right away or store it for later use. Some of these batteries are specialized for certain brands of phones or PDAs, some are general purpose. For instance, there many USB chargers available for charging AA and AAA batteries as well.

PC5 Circuit Function

The PC5 uses a polling feature in its circuitry which insures that the device being charged stays in charge mode, even if sunlight is momentarily interrupted by clouds or other obstructions. It also allows some more sophisticated USB devices to kick into bulk charging modes when more solar power is available. Some devices may make a signal sound when the polling happens, this is normal and is a nice indicator that signals you that your device is still charging and not to forget about it.

iPhone Charging

The iPhone is fully supported. You will most likely be surprised how quickly your iPhone will charge with the PC5. Most of the time it is not even necessary to aim the panel at the sun. You can lay it on any flat surface and it should work fine. For higher and lower hemisphere locals, you may need to aim at sun.

Notes:

Some iPhone models may display a message saying that "Charging is not supported with this accessory". This message will, most likely, display if the panel was shaded. In effect, it's telling you that there is no power available. You can go ahead and dismiss the message and make sure the panel is unshaded. The phone will eventually continue on its charging cycle or you can unplug and plug back in.

Some of the battery utility apps (for example AmICharged) will complain when the charge circuit resets.

iPad Charging

Although the PC5 is at its best with smaller USB devices, we have been able to charge the iPad at charge rates from 10%-12% per hour. For absolute best results, charge on a clear cool day when the sun is high in the sky. Like any solar panel, output power lowers as temperature rises. So charge times may vary.

More tips for successful iPad charging:

- Aim the PC5 in the sun's general direction.
- Lower your screen brightness to 1/3 and turn auto brightness off
- Keep iPad in shade on hot days

If you would like to discuss iPad charging in more detail, feel free to e-mail us with any questions you may have.

Advisories

Keep the device to be charged cool (in the shade) if possible. Heat will shorten the life of your batteries and may cause some devices to shut down or stop charging because of overheating. Glass blocks a large portion of the sun's rays, so charging through glass (such as on the dash of a car) may not work very well.

Try and keep your PC5 clean. If you find dust on the panels, you can simply wipe them off using a soft cloth with a non abrasive spray cleaner or just clean water.

The PC5 is water resistant. If it falls in water, take it out of the water and gently shake the water out of the USB box with USB port hole facing down. If condensation collects in the USB box, you can also blow out the water then let it dry completely by leaning the PC5 so that the USB port is facing up. You could also use a hair dryer too but do not heat the box up too much. It could melt at 170 degrees or so.

Specifications

Connector Type	USB Type "A"
Open Circuit Voltage (solar)	5.5 -6.0V
Closed Circuit Current (solar)	0.8A - 1.2 A (800-1200mA)
Output Voltage (USB)	5.0V
Output Current (USB)	0.8A – 1.2A (800-1200mA)
Output Power	5-6 watts
Temperature	Tested to 160F/ 71C
Indicator	Bright LED
Dimensions (open)	6-1/8" x 11.5" / 15.5 x 29.2 cm
Dimensions (closed)	6-1/8" x 5-3/4" / 15.5 x 14.6 cm
Weight	7 oz / 200 g

Measured charge currents

Device	Current	~Charge times dead battery
iPad	.600-.900mA	8 hours
iPhone 3, 3G, 4	.500-.700mA	3 hours
Android, HTC	.260-.600mA	3 hours stock battery
Duracell PPS2	.450mA	2 hours

Troubleshooting

Note that some of the troubleshooting items are not PC5 specific problems. Some of these problems can happen regardless of what charger you are using.

Trouble	Possible Cause	Solution
Device starts charging then stops	USB Device is overheating	Move device to be charged to a cooler place (in the shade)
Device won't charge at all	Charging through glass	Move the solar panels into direct sunlight
iPhone will not charge at all from AC charger or PC5 charger	unknown	Sync with iTunes or upgrade firmware.
iPhone battery completely dead and will not start charging.	Happens when you do not charge the phone. This is a general problem.	Plug phone into PC5 for a while then unplug. Hold down the Home and Sleep buttons simultaneously for 1 minute. Keep repeating until apple icon appears. Plug phone back into PC5 and place PC5 in the sun. Another solution is to sync with iTunes then phone should reboot.
iPhone, iPad charge indicator showing "plug" icon instead of lightning bolt icon	iPhone, iPad is over heating	Cool down then retry.

Limited warranty

Warranty covers malfunction or defects that may appear in the solar panel or circuitry of the PC5. Not covered is any observable abuse. Abuse is in the form of damage that may have occurred from mishandling the product. Charges may incur if any damage is found.

Warranty period is 1 year from the date of purchase and is non transferable. This is described as transferring ownership of the PC5 to another person.

Warranty includes repair or replacement of the product if it meets the criteria as explained. Shipping will be paid by the customer.

For warranty service, please email info@suntactics.com. Leave your name, phone number, serial number and the nature of the problem and we will respond promptly.

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