

## Voltaic Solar Bags and Solar Chargers

The Voltaic solar bags are solar chargers designed to charge virtually all handheld electronics.

**Powerful Solar Panels:** Embedded in the outside of these solar chargers are lightweight, tough, waterproof solar panels. The new Generator produces up to 15 watts, powerful enough to fully charge a typical laptop from a day of direct sunlight. No other solar bag can do this! The smaller bags produce 4 watts of power so 1 hour in direct sun will power over 3 hours of iPod play time or 1.5 hours of cell phone talk time.

**Battery Included:** All Voltaic bags come with a custom battery pack which stores any surplus power generated, so it is available when you need it - not just when the sun is up. The battery packs can also be charged using the included AC travel charger or car charger, making them just as useful on the grid as off.

**Easy Connection to Devices:** All bags include standard adaptors for common cell phones and other handheld devices. The Generator also includes common laptop adaptors. Even without an adaptor, you can charge most devices with a standard car charger or USB charger.



**Backpack**



**Converter**



**Messenger**



**Generator**



Silver Orange Green Black

Voltaic bags use fabrics made from recycled PET i.e. soda bottles. We worked extensively with suppliers to develop these fabrics, since they were not previously available. Recycled PET fabric is light weight, extremely durable, UV resistant and water resistant. It even looks better than the nylon it replaced. Most importantly, it uses significantly less energy to produce and creates demand for recycled materials.



**FEMTO TEKNİK ÜRETİM MÜHENDİSLİK MÜŞAVİRLİK TIBBİ CİHAZLAR SANAYİ VE DIŞ TİCARET LİMİTED ŞİRKETİ**

Cevat Dünder Caddesi, Kavacıklı İş Merkezi Kat 4, No:15/51 Ostim /Ankara  
Tel : +90 312 354 98 46 Faks: +90 312 354 98 47 www.femtoteknik.com.tr

## Voltaic Generator Solar Laptop Charger

**\$550**

The Voltaic Generator is the first solar bag powerful enough to charge a laptop. This solar laptop charger has high-efficiency cells and includes a battery pack custom designed to efficiently store and convert the electricity generated. It will also charge cell phones and most other hand held electronics.

- **Solar panel generates up to 15 watts** using 20% efficient cells, enough to fully charge the Voltaic battery in about 5 hours.
- The **included battery pack** stores the equivalent of a typical laptop charge and automatically delivers the required output voltages
- **Common adaptors** are included for connection to laptops, phones and other handheld devices. Optional reconfigured MagSafe adapter available for MacBooks.
- Or connect via USB or car charger
- Fabrics made from recycled PET (soda bottles), which is tough and water resistant

Note: Not all manufacturers enable charging from external batteries and our adaptors do not fit all laptops. Results may vary by model, but laptops by Apple, Dell, HP, IBM/Lenovo and Panasonic typically do charge. Brands less likely to charge include Fujitsu, Sony and Toshiba. Returns will be accepted for refund of any bags in new condition for up to 60 days from purchase. For more information contact us.



Silver Orange Green Black

### Specifications:



**Material:** 600D shell made from 100% recycled PET (soda bottles). Webbing, mesh and 150D lining all made from 100% recycled PET. Aluminum frame covered in UV resistant PU. Aluminum and PU hardware. Silicon handle.

**Weight:** 4.5 lbs (2,050 grams) including solar panel and battery.

**Dimensions:** 17"x12"x 3.5" (43x31x9cm) -- will hold up to a 17" MacBook Pro

**Volume:** 700 cubic inches (12 liters)



Indicator light inside the handle shows when the panels are generating a charge

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## ADAPTORS:

The Voltaic Generator includes a set of "Standard Adaptors and Chargers".

Adaptors for most common laptops are included as well as adaptors for common cell phones. See detailed specifications below. Please note: Apple does not allow 3rd parties to license the MagSafe plug, so this is not yet included in the standard set. An optional reconfigured MagSafe charger is available below.

The adapter set includes a car charger socket you can plug in a standard car charger and power most small consumer electronics, including phones, PDAs, cameras, MP3 players, etc.

The battery has an integrated USB socket which works with most USB chargers. For iPhones and iPods, use the included iPhone adapter connected to the DC Out Cable at 6.5-8.4V Volts.

There is also a lightweight AC travel charger, so you can still recharge the battery when not in the sun. We also offer a range of optional adaptors for cell phones, cameras, and PDA's, which are sold separately and detailed below.

Note: Not all manufacturers enable charging from external batteries and our adaptors do not fit all laptops. Results may vary by model, but laptops by Apple, Dell, HP, IBM/Lenovo and Panasonic typically charge. Brands less likely to charge include Fujitsu, Sony and Toshiba. Returns will be accepted for refund of any bags in new condition for up to 60 days from purchase. For more information contact akbar@femtoteknik.com.tr.



## BATTERY PACK:



Included with every bag is a LiIon battery with 58Wh throughput. This is about the same size of a typical small laptop battery. Solar power is stored in the battery inside the bag, ready to run a laptop or other device when needed.

A **USB plug** on top of the battery connects to standard USB chargers. It also provides 5V output to the standard and optional phone adaptors which charge most popular cell phones.

The **voltage selector** on the front of the battery allows for manual selection of voltage ranges 3.5-5.0V, 5.0-6.5V, 6.5-8.4V and 12-20V (by double clicking the button). Within the voltage range, the battery automatically adjusts to deliver the required voltage. This range satisfies the requirements for most hand held electronics and laptop computers. Note: Even though the voltage may be correct, not all

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manufacturers enable devices to charge from external batteries.

A **DC In plug** on the side of the battery connects to power from the solar panels or an included AC charger.

A **charge indicator** on the face of the battery shows when the battery is receiving a charge. When connected to the solar panels, this will come on when the panel is placed in direct sunlight. It shows red when charging at higher power levels and green when trickle charging (either because the battery is nearly full or in cloudy conditions).

There is also a **battery level Indicator** which shows the charge remaining in the battery.

The battery pack clips inside the bag and can be removed for separate use.

**Replacement Battery Pack** \$149 . Includes set of 19 standard adaptors and AC travel charger.

## Specifications

### Battery Pack:

Output Voltage	3.5-5.0V	5.0-6.5V	6.5-8.4V	12-20V
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### Common Specifications:

Input Power	18V 500-833mA
Charge Time	Approximately 5 hours from solar charge (in sunny conditions) or from AC charger
Battery Type	Li-Ion
Protection	Short, Over Charge, Over Discharge, Over Temp.
Weight	9.0 Oz (266g)
Dimensions	4 3/8 x 2 3/4 x 1 1/4" (111 x 68 x 33 mm)

Charge Display	Charging Max. Power	Charging Below Max. or Full
	Red	Green

Capacity Display	Low	Medium	Full
	Red	Amber	Green

## Usage Tips

**Selecting the Correct Voltage:** The power requirement for a particular device is typically indicated in the product literature, on the device itself, or on the charger (as power output). Most laptops charge between 12 and 20 V. Cell phones and PDAs typically operate at 5V – use the USB wire for these devices.

Some devices will operate at several voltage settings. For the most efficient use of power, select the lowest setting that powers your device.

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**Warning:** Using higher than the required voltage may damage some devices.

**Note:** Some devices are designed to work only with factory supplied chargers. In this case, use the factory supplied car charger, and plug it into the car charger socket.

## SOLAR PANELS:



The solar panel is waterproof, scratch resistant, and UV resistant. It uses high efficiency (20%) monocrystalline cells.

The panel generates up to 15 watts of power which will recharge the Voltaic battery from approximately 5 hours of direct sunlight, see typical charging times listed below.

The substrate is an aluminum / plastic composite, specifically designed to be strong and lightweight. They can easily stand up to typical outdoor use. Even if the panel is broken, which would likely take a conscious effort, it can easily be removed and replaced.

The coating is a flexible polymer which can tolerate over 5 years of exposure to direct sunlight. The surface is flexible to help resist scratching. Scratches will actually melt out when exposed to the sun. To allow maximum light to reach the cells, keep the panel surface clean using a soft cloth and alcohol or warm soapy water.



**Replacement Panels \$149**

## Specifications

	<b>Single Panel</b>
Panel Dimensions	15¾" x 11¼" 403mm x 284mm
Weight	25 ounces 710 grams
Substrate Type	3mm Aluminum/Plastic
Cell Type	Monocrystalline
Cell Efficiency	20%
Open Circuit Voltage (Voc)	24V
Closed Circuit Voltage (Vp)	20V
Peak Current (mA <sub>p</sub> )	750mA
Peak Watts (W <sub>p</sub> )	15W

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### Usage Tips

**Note:** For maximum power output, angle the panels towards the sun. When the panels are in direct sunlight but not angled towards the sun the power declines about 20%. When they are angled away from the sun the power drops off 80-90%. Dirt and scratches on the face of the solar panels will reduce the amount of light hitting the solar cells and reduce the power generated. To clean them use a damp non-abrasive cloth.

<b>Approximate Charging Times</b>	
<b>Item</b>	<b>Hours Direct Sunlight *</b>
Voltaic Battery Pack (equivalent to typical notebook battery)	5-6 hours
Cell Phone	<1
Digital Camera	<1-2
GPS	<1
iPod	<1

\*Charge times may be increased in cloudy weather, high temperatures, or where panels are not angled towards the sun. Note: this refers to the amount of time in the sun required to generate enough charge to fully charge the listed device. It may take longer for that charge to flow from the Voltaic battery to the device. A typical cell phone takes 2 hours to charge even from AC power, it will likely take that long for that charge to flow from the Voltaic battery to the cell phone. However one hour in the sun should be enough time to generate and store that charge in the Voltaic battery.

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