

clean energy products

CATALOG
2012 - 2013

solageo



SUSTAINABLE ENERGY
FOR ALL

At Trade Without Borders our focus is on bringing practical product solutions that benefit individuals, households, and entire communities in developing regions of the world.

We are able to do so by leveraging our core competencies in manufacturing, product procurement, product development, and global supply chain management-- and collaborating with a growing network of partners around the globe.

We welcome you to browse this catalog... let us know if our current product solutions meet your needs... or advise us of how we can better meet an unmet need... most importantly, come partner with us in heeding the United Nations' call to provide Sustainable Energy for All.

supporter of:



For more information, please visit
www.sustainableenergyforall.org



TWB is registered through the United Nations Foundation as an Energy Access Practitioner, and is actively working to support the UN General Assembly's Sustainable Energy for All campaign.

Here are some of the ways in which TWB is contributing to Sustainable Energy for All, including for those residing at the proverbial Base of the Pyramid (BoP).

- We focus on offering the most extensive range of quality and affordable Clean Energy products that are also the most appropriate for BoP markets.
- We provide access to essential daily livelihood needs such as Clean Energy Lighting, Solar Mobile Phone Chargers and Solar Cookers that reduce costs longer-term while improving the quality of life for hundreds of thousands at the BoP.
- We are facilitating global distribution of low-power household appliances that can be powered by solar energy in off-grid locations. One example is a low-power Mosquito Trap. The product has been scientifically tested and proven to reduce the incidence of mosquito vectors that transmit tropical diseases such as Dengue Fever. Moreover, at 3.5W, its power requirements are low enabling it to be powered by a 20W Solar System in off-grid locations.
- We enable inventors of "disruptive" inventions for the BoP to more rapidly scale up the manufacturing and market



launch of their inventions by leveraging TWB's core competencies in Product Development and Manufacturing, and importantly, TWB's intuitive insights into BoP markets.

- TWB itself is also working on new, innovative product solutions for BoP markets. Among the projects we are working on is Solar Refrigeration for households and small businesses in BoP markets.
- We are working to build an online portal for the Clean Energy products we procure or help to develop that will enable more efficient and sustainable supply chains that extend all the way to the Bottom of the Pyramid.
- Through local, inclusive enterprises, we can empower hundreds of local entrepreneurs distributing and servicing TWB products to increase their incomes and improve the quality of theirs, their families', and their communities' lives.



- Through the shipment of Clean Energy products to BoP markets world-wide, TWB facilitates the offset of thousands of tons of CO2.
- *We aim to support large, global organizations serving the BoP to more efficiently and effectively procure Clean Energy products for their global members by providing a one-stop marketplace for such products.*
- *We directly contribute to sustainable Social and Economic Development at the BoP by increasing the flow of goods to, from and between developing regions of the world.*





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SOLAR CHARGING SOLUTIONS

SOLAR MOBILE PHONE CHARGERS
SOLAR CHARGERS FOR LAPTOPS
AND OTHER ELECTRONIC DEVICES

THE IMPACT OF EXTERNAL SOLAR CHARGERS
IN KEEPING MOBILE PHONES OPERATIONAL IN
OFF-GRID COMMUNITIES

1 hour of charging
= 20 minutes talk time

5 hours of charging per week
= 100 minutes of talk time per week

Given 52 weeks in a year
= 5200 minutes of talk time per year

AS MANY AS **500 MILLION PEOPLE**
WITH MOBILE PHONES LIVE IN AREAS
WITH NO ACCESS TO ELECTRICITY

[source : GSMA]



THE IMPACT OF MOBILE PHONES
ON DEVELOPING REGIONS OF THE WORLD

**Almost 70% of mobile phone
subscriptions are in developing
regions of the world.**

Not surprising as mobile phones:

- > Provide a leap of technology access to modern communication facilities
- > Enable rural households to keep in contact with family and friends who have migrated to the cities
- > Serve as a valuable income generating tool for farmers, traders, village shop owners, Self-Help Groups and many others. In one World Bank study of 120 countries, for every 10% points increase in the penetration of mobile phones, there is an increase in economic growth of 0.8% points in developing countries.

SOLAR CHARGER with LED TORCH

TWB-H779



BATTERY CHARGING TIME



USB
4 hours



Solar Power
17-20 hours



Solar Panel
0.2W



Battery
Lithium Battery
600mAh

KEY FEATURES

- Built-in 600 mAh Lithium Battery
- Short-term charging for most mobile phones
- Recharge charger by Solar panel or USB
- Super bright LEDs
- Output Voltage - Solar: 5.5V / USB: 5V



BATTERY CHARGING TIME

Model No.	AC Power	Solar Power	Battery	Solar Panel
TWB-H353	3 hours	12 hours	Lithium Battery 350mAh	0.2W
TWB-H733-1	6 hours	21 hours	Lithium Battery 1200mAh	0.33W
TWB-H-751 751-1	6 hours 8 hours	20 hours 40 hours	Lithium Battery 1000mAh 2000mAh	0.28W

SOLAR CHARGER WITH LED TORCH

TWB-H353



KEY FEATURES

- Built-in 350mAh Lithium Battery
- Short-term charging for most mobile phones
- Recharge charger by Solar panel or USB
- Super bright LEDs
- Output Voltage - Solar: 5.5V / USB: 5V
- Output Current - Solar: 35mA / USB: 300mA

SOLAR CHARGER WITH LED TORCH

TWB-H733-1



KEY FEATURES

- Built-in 1200mAh Lithium Battery
- Rubberized exterior for added protection
- Charge most mobile phones
- Recharge charger by Solar panel or USB
- Bright LED torch
- Output Voltage - Solar: 5.5V / USB: 5V
- Output Current - Solar: 60mA / USB: 350mA

SOLAR CHARGER

TWB-H-751/H-751-1



KEY FEATURES

- Built-in 1000mAh (TWB-H-751)
2000mAh (TWB-H-751-1) Lithium Battery
- Charge most mobile phones
- Charge by Solar Panel or via USB
- LED Battery Indicator
- Output Voltage - Solar: 5.5V / USB: 5V
- Output Current - Solar: 50mA / USB: 300mA

SOLAR CHARGER WITH LED FLASHLIGHT

TWB-SB-3077



BATTERY CHARGING TIME



AC Adaptor
4 hours



Solar Power
8 hours



Solar Panel
0.325W x 3



Battery
NiMH
3.6V/700mAh



Lumens
8

KEY FEATURES

- Charge battery via sunlight or 9V AC/DC adaptor (not included)
- Multiple light settings: 1 LED; 3 LEDs; 3 LEDs flashing
- Bright LED lighting
- Charge a mobile phone for emergency use
- Charging indicator
- Output voltage: 5.4V
- Output current: 500mA

EXTERNAL SOLAR CHARGER

TWB-SL-1505

BATTERY CHARGING TIME



USB
2.5 hours



Solar Power
12 hours



Solar Panel
117 x 70 x 9mm
0.72W



Battery
NiMH
4.8V/800mAh

KEY FEATURES

- Separate Solar Panel & Battery Box
- Overcharge / Over-discharge protection
- Replaceable Rechargeable Batteries
- Standard: 10 pcs. Mobile Phone Connectors
- 3 LEDs for Flashlight functionality
- Carrying Strap



PORTABLE SOLAR CHARGER

Fully charge your mobile phone, laptop and other digital devices



TWB-MP-S500

KEY FEATURES

- Foldable Panels for easy portability
- Solar Panel Dimensions: 140 x 80mm x 2pcs
- Output: 3W (max)
- Output Voltage: 5V +/-0.2V
- Output Current: 600mA (max.)
- Dimensions (closed): 170 x 115 x 26mm
- Dimensions (open): 230 x 175 x 15mm
- Weight 205g



Solar Panel
1.5W x 2pcs



TWB-MP-S750

KEY FEATURES

- Foldable Panels for easy portability
- Solar Panel Dimensions: 90 x 70mm x 6pcs
- Output: 4.8W (max.)
- Output Voltage: 5V +/-0.2V
- Output Current: 960mA (max.)
- Dimensions (closed): 145 x 135 x 65mm
- Dimensions (open): 790 x 135 x 13mm
- Weight 310g



Solar Panel
0.8W x 6pcs

ACCESSORIES



10 Mobile Phone Connectors



Optional Power Bank

SOLAR CHARGER

TWB-RS-009



BATTERY CHARGING TIME



USB
2 hours



Solar Power
8 hours



Solar Panel
53 x 73mm
0.5W



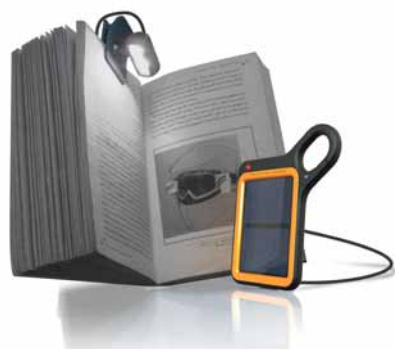
Battery
Li-Ion
3.7V/750mAh

KEY FEATURES

- Charge your mobile phone or other electronic devices
- Slim Design
- Carabiner for easy clip-on functionality
- Battery Power indicator light (on back)
- 2 Charging cables and 7 Connector tips to charge a variety of mobile phone models (Nokia 2mm, Nokia 3.5mm, Motorola, Mini USB, Samsung Small, Sony Ericsson Wide, Micro USB); Optional iPhone connector

LED LIGHTING OPTIONS

All products listed below include a Solar Charger for recharging



RECHARGEABLE LED BOOKLIGHT

TWB-A010



RECHARGEABLE LED FLASHLIGHT

TWB-A020



RECHARGEABLE LED ROOM LIGHT

TWB-A040

	BATTERY	CHARGING TIME	LED	LUMENS	LIGHTING TIME	KEY FEATURES
TWB-A010			2 LEDs	5 Lumens	12 hours	<ul style="list-style-type: none"> • Compact Reading Light • Convenient Clip affixes easily to most reading material
TWB-A020	3xAAA Ni-MH 3.6V/300mAh	1 hour	3 LEDs	Low: 2 Lumens High: 6 Lumens	Low: 12 hours High: 4 hours	<ul style="list-style-type: none"> • Ergonomic Design • Multiple light settings • One-Touch Power operation
TWB-A040	3xAAA Ni-MH 3.6V/650mAh	3 hours	12 LEDs	Low: 6 Lumens Mid: 12 Lumens High: 25 Lumens	Low: 12 hours Mid: 5 hours High: 3 hours	<ul style="list-style-type: none"> • Multiple Light Settings for Reading, Working or as a Stand-by Room Light • Flexible neck is easily adjustable to different angles • Base with Adjustable Arm <ul style="list-style-type: none"> - Lay flat on desk - Swing out half-way to elevate the Base - Swing out all the way to hang on wall • ON-OFF Power Switch



SOLAR LIGHTING SOLUTIONS

SOLAR LANTERNS SOLAR BIKE LIGHT
SOLAR LAMPS ENERGY SAVING BULBS
SOLAR FLASHLIGHTS SOLAR OUTDOOR LIGHTING



Through local, inclusive partners we are working to provide communities in off-grid locations with access to appropriate, affordable & quality clean lighting solutions.

SOLAR LED LAMPS



stable & bright

~100 lumens/watt

~ \$0.05 / klxh

VS.

LIGHT QUALITY

ENERGY EFFICIENCY

COST EFFICIENCY



inconsistent flickering

only ~0.2 lumens/watt

~ \$1.80 / klxh

[volatile price]



klxh = 1000 lumens for 1 hour [source: LBNL, Mills, 2003]

**BETTER QUALITY + MORE EFFICIENT LED LIGHTING =
BETTER VALUE & MORE COST-EFFECTIVE ILLUMINATION**

- More productive working and study hours in off-grid communities
- Better air quality reduces health risks while also eliminating fire hazards
- Green lighting is environmentally friendlier, greatly reducing CO₂ emissions
- Lasts 10 times longer than an incandescent bulb

DID YOU KNOW?

- Kerosene and other fuel powered lights consume 77 billion liters of fuel
- A single kerosene lantern burns, on average, for 4 hours a day and emits over 100kg of CO₂ per year
- Total emissions for all fuel based lighting results in 190 million metric tons of CO₂ emissions, equivalent to 1/3 the total emissions from the UK

RECHARGEABLE MINI LANTERN

TWB-H519

KEY FEATURES

- Built-in rechargeable batteries
- Bright LED lighting
- Orange emergency lighting
- Charging indicator light
- Emergency mobile phone charging
- Alternative charging options: Charge using car lighter socket



Battery
Ni-MH
5V/750mAh



Charging Time
5 hours



LED
1 LED



Lumens
1.60



Lighting Time
6 hours



SOLAR/DYNAMO RECHARGEABLE LED LANTERN

TWB-TF-12

KEY FEATURES

- Dual Lighting Options
 - Flashlight
 - Lantern
- Multiple Charging Options
 - Charge by built-in Solar panel
 - Charge by external Solar panel (not included)
 - Charge by Dynamo Cranking power
 - Charge by car's cigarette lighter (car adaptor not included)
 - Charge by AC (grid) power (AC/DC adaptor not included)
- Easily replaceable rechargeable batteries
- Temporarily charge your mobile phone in an emergency
- AM/FM Radio
- Built-in Speaker
 - Listen to the radio
 - Aux-in function: Connect your mobile phone or digital music player and listen to your favorite downloaded songs off the Lantern's speaker.
- Can be powered by back-up disposable batteries (3 x AA, not included)



Battery
Ni-MH
3.6V/280mAh



Charging Time
6 hours by AC
16 hours by Solar



LED
1 Flashlight
7 Lantern



Lumens
Flashlight: 0.7
Lantern: 5



Lighting Time
Flashlight: 18 hours
Lantern: 4 hours

RECHARGEABLE DYNAMO LAMP

TWB-SB-6021



KEY FEATURES

- Multiple Light Functions
Stand on desk - Desk Lamp
Hang on ceiling - Ceiling or Room Light
Hang on wall - Wall or Task Light
Hand carry - Flashlight
- Easy recharging using the Dynamo Crank
- Strap for easy handling
- Water resistant (IP43 rating)



Battery
Ni-Mh
3.6V/80mAh



Charging Time
~1 min cranking
= 8 min lighting



LED
6 LEDs



Lumens
22



Lighting Time
4 hours

SOLAR/DYNAMO LED WATER RESISTANT FLASHLIGHT

TWB-SB-6019

KEY FEATURES

- Integrated Solar Panel
- Dynamo cranking power
- No external batteries required
- Multiple Light Settings
- 1 LED; 3 LEDs; 3 LEDs flashing
- Water Resistant (IP44)



Solar Panel
0.11W



Battery
Ni-Mh
3.6V/80mAh



Charging Time
8 hours



LED
3 LEDs



Lumens
8



Lighting Time
4 hours

DYNAMO LED FLASHLIGHT WITH RADIO

TWB-SB-3030

KEY FEATURES

- Dynamo Charging - no batteries needed
- Multiple Light Settings
- 1 LED and 3 LEDs;
- FM scanner
- Alarm sound



Battery
Ni-Mh
3.6/80mAh



Charging Time
~ 3 min cranking
= 25 mins light



LED
3 LEDs



Lumens
8



Lighting Time
4 hours

LED SOLAR FLASHLIGHT

TWB-WTE-607



Solar Panel
53x73mm
0.5W



Battery
Ni-Mh
AA batteries
3.6V/600mAh



Charging Time
5 hours



LED
7 LEDs



Lumens
30



Lighting Time
4 hours

KEY FEATURES

- Durable construction
- Integrated solar panel
- Illumination distance: 5m



LED SOLAR FLASHLIGHT

TWB-WTE-608



Solar Panel
0.35W



Battery
Ni-Mh
AA batteries
3.6V/600mAh



Charging Time
5 hours



LED
1 LED



Lumens
20



Lighting Time
4 hours

KEY FEATURES

- Durable construction
- Integrated solar panel
- Illumination distance: 5m



LED SOLAR FLASHLIGHT

TWB-WTE-604



Solar Panel
0.5W



Battery
Ni-Mh
AA batteries
3.6V/600mAh



Charging Time
8 hours



LED
15 LEDs



Lumens
65



Lighting Time
2-3 hours

KEY FEATURES

- Durable construction
- Integrated solar panel
- Illumination distance: 8m

LED BICYCLE LIGHT

TWB-SB-1075



KEY FEATURES

- Dynamo cranking power
- Multiple light settings: 1 LED; 3 LEDs; 3 LEDs Flashing
- Adjustable clip to affix to bicycle handlebar; Easily detachable - take it with you.
- Compact Design



Battery
Ni-Mh
3.6V/80mAh



LED
3 LEDs



Lumens
10



Lighting Time
5 hours

LED BICYCLE LIGHT

TWB-SB-6027A



Battery
Ni-Mh
3.6V/80mAh



LED
3 LEDs



Lumens
10



Lighting Time
3 hours

KEY FEATURES

- Dynamo cranking power
- Multiple light settings: Low; High; Flashing
- Adjustable clip that can rotate 360° to affix to bicycle handlebar; Easily detachable - take it with you
- Use as a Flashlight when not bicycling



LED HEAD LIGHT

TWB-SB-1058



KEY FEATURES

- Dynamo cranking power
- Multiple light settings: Low; High; Flashing
- Use as a hands-free Head Light or convenient hand-held Flashlight
- Adjustable head strap
- Compact and lightweight



Battery
Ni-Mh
3.6V/80mAh



LED
3 LEDs



Lumens
6










Lighting Time
5 hours

SOLAR WALL LIGHT WITH MOTION SENSOR

TWB-0294-W

KEY FEATURES

- Sturdy stainless steel housing
- Wall bracket mounting

						
Solar Panel	Battery	LED	Lumens	Water Resistant	Charging Time	Lighting Time
0.45W	Ni-MH 3 x AA 1.2V/600mAh	9 LEDs	63	IPX4	6-10 hours	6-8 hours










SOLAR SECURITY LIGHT WITH MOTION SENSOR

TWB-0114

KEY FEATURES

- High temperature plastic housing
- Wall mounting

						
Solar Panel	Battery	LED	Lumens	Water Resistant	Charging Time	Lighting Time
0.7W	Ni-MH 4 x AA 1.2V/600mAh	9 LEDs	100	IPX4	6-10 hours	6-8 hours



ADDITIONAL SOLAR LIGHTING

We have an extensive portfolio of more than 30 solar outdoor lighting items to choose from.

LED SOLAR STREET LAMPS



KEY FEATURES

- LED Lamps
 - Color Temperature: 2700-7000K
 - Lumens: 130 Lumens/W
 - Life Span: 50,000 hours
 - Beam Angle: 150°
 - Housing: Aluminum; Tempered Glass Cover
 - AC or DC input voltage
- Crystalline Solar Panels
- Maintenance-free Lead Acid Battery
- Intelligent Controller
- Carbon steel pole, hot dip galvanized, with weather-proof coating




Lamp Wattage (exact wattage can vary depending on project requirements)
 20W 30W 40W 50W 80W 100W 120W 150W



SOLAR LED LAMP POST

TWB-DY-008-51

					
Solar Panel 4W	Battery NiMH 3.6V/4500mAh	Lumens 203	LED 29x0.07W	Charging Time 6-10 hours	Lighting Time 6-8 hours



KEY FEATURES

- Aluminum Body
- Glass Lens
- Large capacity Solar Panel
- Long-life LED lighting

ENERGY SAVING BULBS

CFL

KEY FEATURES

- 7W and above
- 45 Lumens/W
- 8000 hour life
- AC or DC input (select models) voltage
- Cool White or Warm White Color Options
- E27 Base



LED

KEY FEATURES

- 3W and above
- 240-400 Lumens
- 50,000 hours
- AC or DC input (select models) voltage
- Cool White or Warm White Color Options
- E27 Base



RECHARGEABLE BATTERIES



AAA



AA

KEY FEATURES

- NiMH: Standard and Ready-to-Use
- Battery Sizes: AAA, AA or 9V
- Battery capacity
 - 9V: 160-200mAh
 - AAA: 700-1000mAh
 - AA: 1500-2500mAh

Did you know?

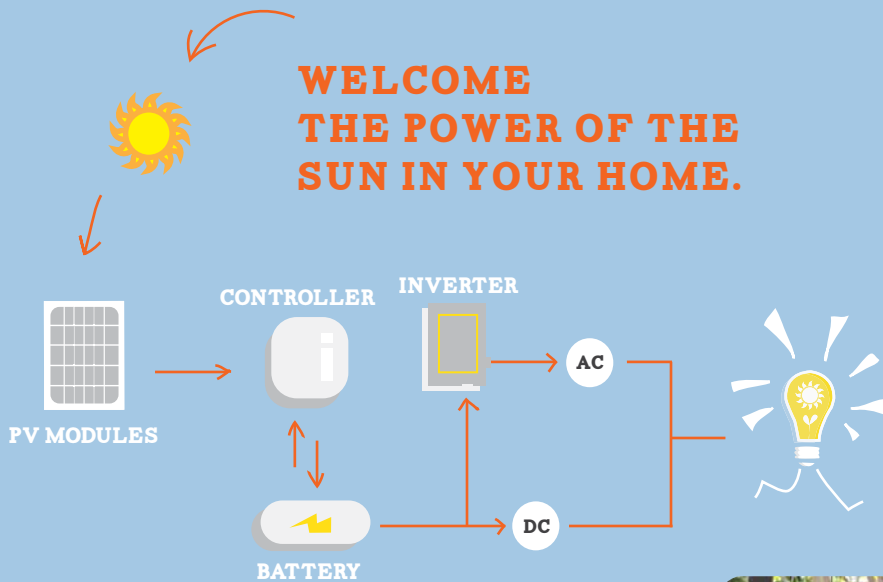
RECHARGEABLE BATTERIES CAN BE

REUSED **100 or more times**

VERSUS DISPOSABLE BATTERIES' ONE TIME USE.

CLEAN HOME ENERGY SOLUTIONS

AC/DC SOLAR HOME SETS
PORTABLE SOLAR SOLUTIONS
LOW POWER HOME APPLIANCES



AC/DC SOLAR HOME SETS

Choose from our Standard Box Set or a Do-It-Yourself Solar Kit



Standard Box Set



DIY Solar Kit

APPLICATIONS:

Lighting



LED Lamp



Lantern

Electronic Device Charging



Mobile Phones



Laptop



Music Player

Home Appliances



LED
Desk Lamp



Household Fan



LED TV

POWER OPTIONS: 10W - 160W

COMPONENT	SPECIFICATION
SOLAR PANEL	10W TO 160W
CONTROLLER	Per Solar Home Set
BATTERY	Per Solar Home Set
LIGHTING	LED lamp 3W CFL lamp 7W or other options










PORTABLE SOLAR POWER SOLUTIONS

KEY FEATURES

- Portable Design makes it easy to relocate
 - Easily adjustable solar panels
- Conveniently charge your mobile phone
- Portable Power for household lighting

BATTERY CHARGING TIME

Model No.	 AC Power	 Solar Power	 Battery	 Solar Panel	 LED	 Lumens	 Lighting Time
RB5A	8-10 hours	20 hours	Lead Acid 12V/4Ah	2W x 2	3 - Front 8 - Side	80 - Front 50 - Side	30 hours - Front 50 hours - Side
RB5B	8-10 hours	20 hours	Lead Acid 12V/4Ah	2W x 2	8	50	30 hours

TWB-RB5A

- Extra Features:
- Side Panel lighting
 - Radio



TWB-RB5B

- Extra Features:
- Fold out front lighting
 - Radio



TWIN 5" RECHARGEABLE FAN

TWB-i503



KEY FEATURES

- DC Input Voltage
- AC/DC Adapter: 7V, 800mA
- Adjustable twin fans for maximum comfort
- 2 Speed Settings
- LED Indicator Lights
- Charging and Fully Charged Indicator Lights
- Compact, Slim Design

BATTERY CHARGING TIME



AC Power
7 hours



Battery
NiMh
4.8V/1800Ah



Power
5.6W



Working Time
(Rechargeable Battery)
3 hours (HIGH)
4.5 hours (LOW)

10" RECHARGEABLE FAN with LED LIGHTING

TWB-LW8



KEY FEATURES

- AC or DC Power Supply
- Over-charge and over-discharge protection
- Lightweight and Portable
- 2 Speed settings
- Charging Indicator Light
- Fully Charged Indicator Light
- 38W Power Rating

BATTERY CHARGING TIME



AC Power
12 - 18 hours



Battery
Lead Acid
6V/4Ah



LED
2 x 10 LEDs



Working Time
Fan : 4 hrs
Light : 25 hrs
Both : 3 hrs

BATTERY CHARGING TIME



AC Power



Cranking



Solar Power



Battery



Solar Panel



LED



Lighting Time

Portable Solar Dynamo Radio	4.5 hours	6 hours	20 hours	Lithium Battery 5V/750mAh	0.3W	1 LED	15 hours
Solar/Dynamo Radio & Flashlight	6 hours	3.5 hours	16 hours	Ni-Mh 3.6V/280mAh	5V/60mA 0.3W	3 LEDs	3.3 hours
Multi-Functional Dynamo Radio	6 hours	1.5 hours	n/a	Ni-Mh 3.6V/280mAh	n/a	Torch: 3 LEDs Reading Lamp: 4 LEDs	3 hours 2.5 hours

PORTABLE SOLAR DYNAMO RADIO

TWB-H629

KEY FEATURES

- Built-in 750mAh lithium battery
- Short-term charging for most mobile phones
- Charge by solar panel, Dynamo Cranking, AC/DC adapter (not included), or USB
- Back-up battery compartment for standard disposable batteries
- AM/FM Radio (AM: 525-1720KHz, FM: 88-108MHz)
- LED Lighting

SOLAR / DYNAMO RADIO & FLASHLIGHT

TWB-TF22N



KEY FEATURES

- Operate as a Flashlight or stand upright to use as a Lantern
- 3 Bright LEDs
- Triple Charging Options:
 - Dynamo Cranking Power
 - External AC/DC Adapter (not included)
 - Integrated Solar Panel
- Easily replaceable rechargeable batteries
- Back-up battery compartment for standard disposable batteries (not included)
- AM/FM Radio (AM: 530-1600kHz or AM: 530-1710kHz; FM: 88-108MHz)
- Built-in Speaker

MULTI-FUNCTIONAL DYNAMO RADIO

TWB-TF38

KEY FEATURES

- AM/FM Radio (AM: 530-1600kHz or AM: 530-1710kHz; FM: 88-108MHz)
- Multiple Lighting Functions
 - 3 LED Flashlight
 - 5 LED Adjustable Reading Light
- Built-in Speaker with Aux-in Function

Connect your mobile phone or digital music player and hear downloaded songs through the unit's speakers
- Dual Charging Options:
 - Large Dynamo Handle for easy Cranking Power
 - External AC/DC Adapter (not included)
- Easily replaceable rechargeable batteries



- Back-up battery compartment for standard disposable batteries (not included)
- Large LCD Display
- Emergency Charging for Mobile Phones
- Alarm Clock function

LED DESK LAMPS



LED
47 x 0.07W



Lumens
240



TWB-WTG-020



TWB-WTF-021

KEY FEATURES

- Adjustable Lamp Head
- 4 Light Settings
- LED Color options: White or Warm White
- LED Life - More than 36,000 hours
- Low Power Consumption: 3W
- Power by AC input; Battery back-up power



LED Lamp

Base

PORTABLE SOLAR COOKER

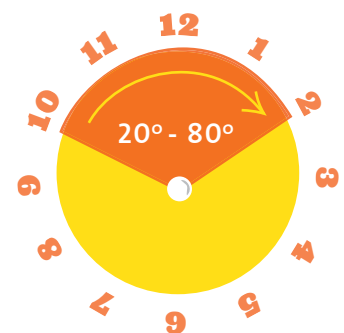
TWB-SC-1



KEY FEATURES

- Compact & Lightweight (616g) for easy portability
- Made with high quality carton box material from Japan
- Easy to adjust the angle of the reflective panels as the position of the sun changes
- Suitable for use in a variety of locations
- Best when used with black color cookware

CLEAN ENERGY COOKING



TIP: THE BEST TIME FOR COOKING WITH THE SOLAR COOKER IS BETWEEN **10AM TO 2PM**



AC Power



DC Power



Gas



Power

Insulation

	AC Power	DC Power	Gas	Power	Insulation
AC/DC Thermoelectric Refrigerator	110/230V	12V	n/a	40W	CFC-Free PU Foam
3-Way Absorption Refrigerator	110/230V	12V	15g/hr	90W	CFC-Free C-Pentane Foam
DC Compressor Refrigerator	110/230V	12/24V	n/a	65W	CFC-Free C-Pentane Foam

AC/DC THERMOELECTRIC REFRIGERATOR

TWB-MNBX10



KEY FEATURES

- AC or DC Power Supply
- 10L capacity (Optional 18L capacity)
- Can hold 10-12 cans of beverage or store fruits, vegetables or other items
- Cools to 18°- 20°C below the ambient temperature
- Electronic temperature control
- Compact size makes it easy to transport

3-WAY ABSORPTION REFRIGERATOR

TWB-XC-42G



Optional:
Front-Door Model
[TWB-XC-43G]



KEY FEATURES

- 3-Way Power Supply: AC, DC or LPG Gas
- Large 42L capacity
- No Compressor or moving Parts
- Noiseless Operation
- Cools from 20°- 30°C below the ambient temperature

DC COMPRESSOR REFRIGERATOR

TWB-DC60



KEY FEATURES

- AC or DC input voltage
- 60L capacity (50L fridge; 10L freezer)
- Refrigerator and Freezer Functions
- Cooling Capacity: Refrigerator: 0°- 10°C
Freezer: -15°C



Optional:
Top-Door Model
[TWB-DC40Y]

MOSQUITO TRAP with OPTIONAL SOLAR POWER

TWB-B10-1



Power
3.5W



DC
12V; 0.3A



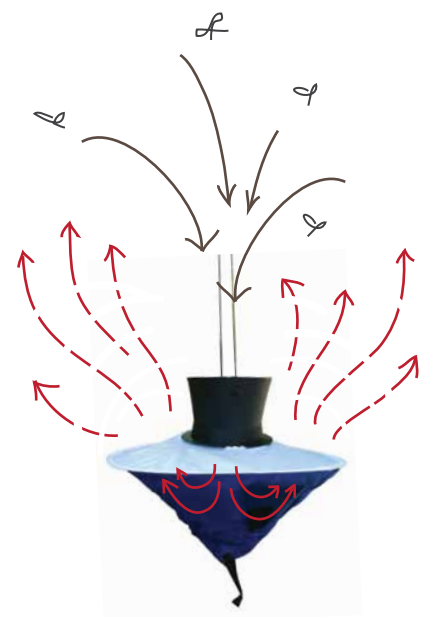
KEY FEATURES

- Scientifically proven to be effective against mosquito vectors that transmit Dengue Fever, Yellow Fever and other tropical mosquito borne diseases.
- Patented combination of visual signals, air flow and the unique chemical attractant lures and traps mosquitoes
- Low-power: Only 3.5W
- Can be powered by a 20W Solar System in off-grid locations
- Ecologically Safe:
 - Non-Toxic - No Pesticides or Insecticides
 - Safe for people and pets
 - Does not catch beneficial insects
 - Replaceable Chemical Attractant lasts 2-3 months



HOW IT WORKS:

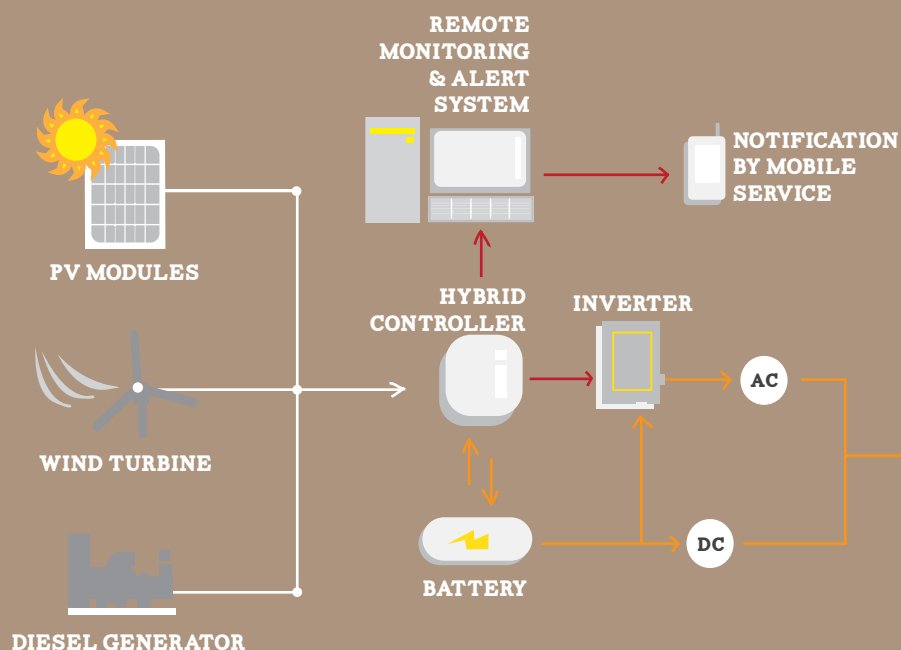
1. AN INTEGRATED FAN GENERATES UPWARD CURRENTS SIMILAR TO A WARM HUMAN BODY.
2. THE PATENTED COMBINATION OF VISUAL SIGNALS, ARTIFICIALLY GENERATED AIR PLUMES, AND THE UNIQUE LURE ATTRACTS THE MOSQUITOES.
3. MOSQUITOES ATTRACTED TO THE TRAP ARE SUCKED INTO THE TRAP WHERE THEY DEHYDRATE AND DIE.



CLEAN ENERGY SOLUTIONS FOR YOUR COMMUNITY

SOLAR POWER STATIONS
HYBRID ENERGY STATIONS
MICRO GRIDS

**THESE SOLUTIONS PROVIDE RENEWABLE ENERGY
FOR SCHOOLS, HEALTH CLINICS, SMALL FACTORIES,
OR EVEN A SMALL VILLAGE COMMUNITY.**



Enabling Sustainable Communities





SOLAR POWER STATION

TWB-BX-FD-1.6KW



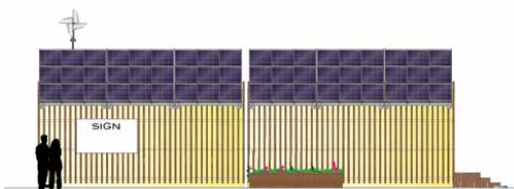
SAMPLE FEATURES

- Solar panel: 200 Watts 24 volts x 8 pcs
- Solar Charger: 24V 20A x 1 pc
- Inverter: 24V 1500 Watts x 1 pc, Output 110V 60Hz/220V 50Hz
- Combiner Box with breaker function x 1 set
- Mounting pole x 1 set
- Lead-Acid Batteries 12 Volts 225Ah x 2 pcs
- Battery Cables
- Inverter Cable x 1 set

HYBRID ENERGY

[DIESEL + SOLAR + WIND]

Reduces diesel fuel consumption by up to 70%



SOLAR SYSTEM COMPONENTS

SOLAR PANELS / MODULES

MONO AND POLY CRYSTALLINE PANELS



KEY FEATURES

- Mono or poly crystalline modules
- Alluminum frame
- IP65 (water resistant)
- CE Certification (all panels)
- IEC Certification (large panels)

AMORPHOUS THIN FILM PANELS



KEY FEATURES

- Stable power output including under indirect or diffuse light
- Aesthetic outlook suitable for BIPV projects
- IEC Certification

FLEXIBLE SOLAR MODULES



KEY FEATURES

- Operating temperature range -40° - 85°C
- Humidity Temperature Test: 85° C, 85% RH 1000h
- Junction Box: 1P 65

OTHER COMPONENTS

CONTROLLERS



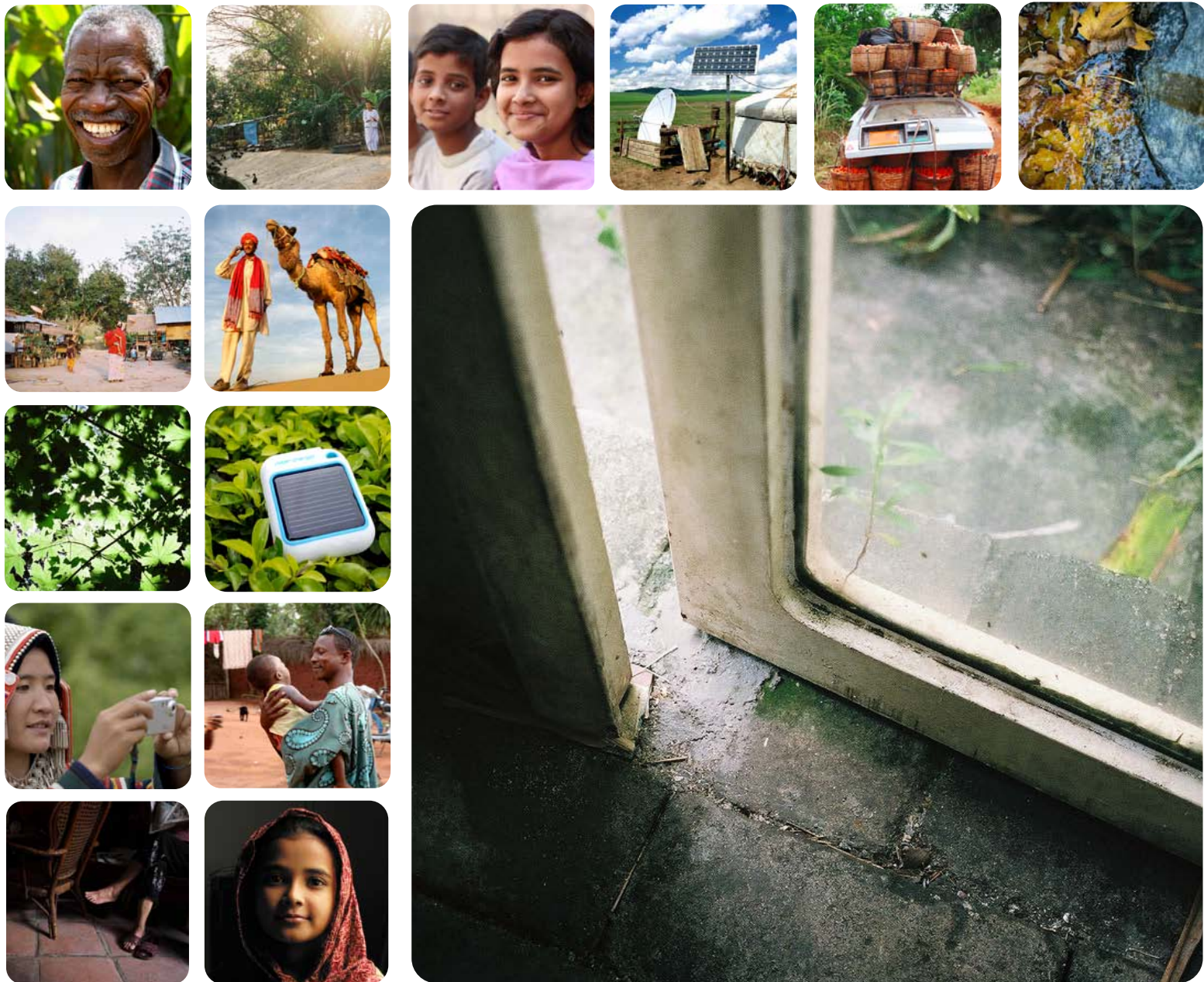
INVERTERS



BATTERIES



PLUS ALL OTHER SOLAR SYSTEM COMPONENTS



clean energy products



CATALOG
2012 - 2013

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