



GPS SunBox

A Complete Solar Lighting System

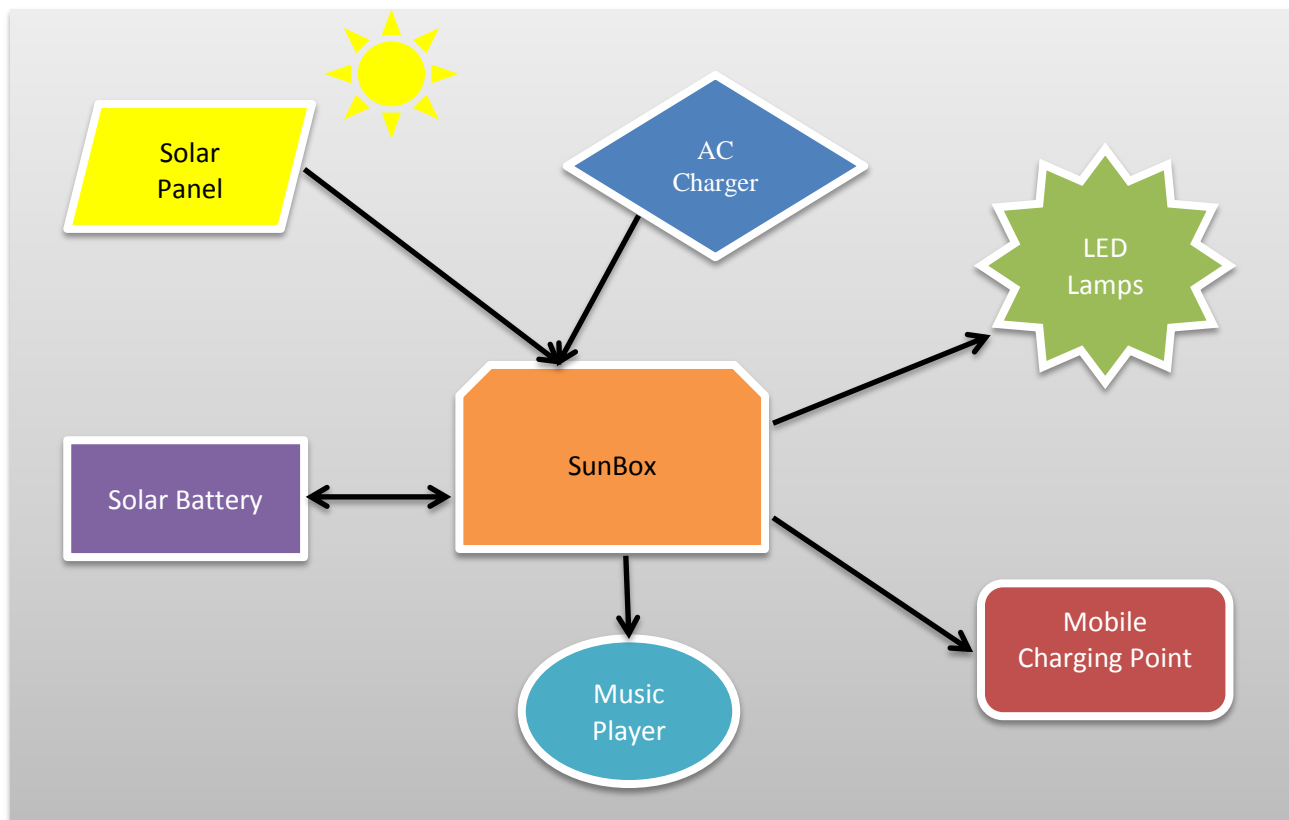
Introduction

SunBox is a solar powered workhorse that can be used to light up multiple rooms at once using Solar PV Technology. SunBox comes in 2 models: Ultra & Supreme. Ultra is an entry level model with 2 LED Lamps, while Supreme is a full featured option with a larger battery, 3 LED Lamps, Mobile Charger, and optionally a Music Player with Built-In Speaker. SunBox can also be charged using an AC charger.

Key Features

- Safe & Simple Installation
- Solar/AC Powered & Pollution Free
- Multiple room support
- Very Bright LED Lamps with Dimmer – Long Lasting!
- Mobile Charger
- Music Player
- Available in various options
- Fully Serviceable

System Components



SunBox

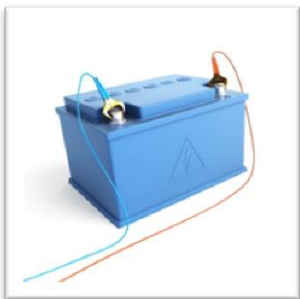
This is the brain of the system. It performs the following functions:

1. Charges Battery via the Solar Panel or an AC Charger
2. Protects the Battery from Over-Charge and Under-Charge
3. Indicates the charging status of the system (Battery Full, Charging, Low)
4. Supplies power to various loads connected to the system
5. Protects system from short circuit
6. Has all necessary sockets for LED Lamps and Mobile Charging
7. Optionally includes Music Player and Built-In Speaker



Solar Panel

Solar Panel converts sunlight into electricity, which is used to charge the Battery. It comes with a long cable that plugs into SunBox. The panel must be placed in direct sun light throughout the day. Panel capacity is measured in “Watts”, which is the total energy generated by the panel when placed in direct sunlight. Panel is selected based on total energy required by the system in 24 hours.



Solar Battery

Electricity generated by the Solar Panel during daytime is stored in the Battery so that it can be used at night when sun is not shining. Batteries come in various storage capacities denoted by “Ampere Hours” or “Ah”. Capacity of the battery depends on total load connected to the system, and total hours of backup required.

LED Lamps

These provide energy efficient lighting for the tasks at hand. Long wires are included so that you can carry out work at a distance. Each task might need a different level of illumination. Therefore, a dimmer is provided with each lamp that lets you reduce brightness and save power. LED Lamps do not break easily, are rust proof, and also last a very long time. The lamps produce Pure White light which is suitable for jobs like reading, cooking, etc.





Mobile Charging Points

USB socket (5V DC) is provided for charging Mobile Phones. Multi-pin is provided that is suitable for charging most mobile phones.

Music Player

The MP3/FM player can be used to play music from a USB Drive, micro SD card, or AUX input. It can also tune into a local FM station. The integrated 3W Speaker is sufficient for a large room. Remote control is also provided.



Technical Specifications

Model	SunBox Ultra	SunBox Supreme
Application	<ul style="list-style-type: none"> Small shops, roadside stalls, rural homes, classrooms, etc. 	<ul style="list-style-type: none"> Homes, shops, farmhouses, schools, offices, etc.
Daily hours of operation	<ul style="list-style-type: none"> 4 Hours for 2 lamps 8 Hours for 1 lamp 	<ul style="list-style-type: none"> 5 Hours for 3 lamps at full brightness 10 Hours for 3 lamps at half brightness
SunBox	<ul style="list-style-type: none"> Beautiful rust-proof body 6V DC sockets with ON/OFF Switch (2 nos) Solar Panel/AC Charger socket Charging indicators Wall mountable Solar Charge Controller efficiency > 95% Protections: <ul style="list-style-type: none"> Short Circuit Reverse Polarity for Panel, Battery, Lamps Battery over-charge and under-charge Reverse current flow to Panel 	<ul style="list-style-type: none"> Beautiful rust-proof body 12V DC sockets with ON/OFF Switch (3 nos) 5V USB socket Solar Panel/AC Charger socket Charging indicators Music Player with Speaker (Optional) Wall mountable Solar Charge Controller efficiency > 95% Protections: <ul style="list-style-type: none"> Short Circuit Reverse Polarity for Panel, Battery, Luminary Battery over-charge and under-charge Reverse current flow to Panel
LED Lamps	<ul style="list-style-type: none"> 3W Super Bright LED Lamps (2 nos) Light output 260 lumens each lamp 6V DC Operation CRI: 80 Color: Cool White Rust-proof Injection moulded body 180° PC Diffuser 3m DC extension cable with each lamp (2 nos) Driver efficiency: up to 95% 	<ul style="list-style-type: none"> 5W Super Bright Dimmable LED Lamps (3 nos) Light output 480 lumens each lamp 12V DC Operation CRI: 80 Color: Cool White Rust-proof Injection Moulded Body 180° PC Diffuser 3m DC extension cable with dimmer switch for each lamp (3 nos) Driver efficiency: up to 95%

Battery	<ul style="list-style-type: none"> ○ 6V 4.5Ah ○ SMF maintenance free lead acid ○ Depth-of-discharge < 60% 	<ul style="list-style-type: none"> ○ 12V 9Ah ○ SMF maintenance free lead acid ○ Depth-of-discharge < 60%
Solar Panel	<ul style="list-style-type: none"> ○ Option of 3W or 5W Panels (6V) ○ 3m cable with DC socket ○ 156 X 156mm Multi-Crystalline Si Cells, Tempered & Low Iron Glass, IP65 Anodized Aluminum frame, Weather Proof Nylon 6 junction box with 2 bypass diodes ○ Charging Time <ul style="list-style-type: none"> ▪ 9 Hours for 3W Panel ▪ 6 Hours for 5W Panel 	<ul style="list-style-type: none"> ○ Option of 10W/15W/20W Panels (12V) ○ 3m cable with DC socket ○ 156 X 156mm Multi-Crystalline Si Cells, Tempered & Low Iron Glass, IP65 Anodized Aluminum frame, Weather Proof Nylon 6 junction box with 2 bypass diodes ○ Charging Time <ul style="list-style-type: none"> ▪ 12 Hours for 10W Panel ▪ 7 Hours for 15W Panel ▪ 6 Hours for 20W Panel
Mobile Charger	<ul style="list-style-type: none"> ○ Not applicable 	<ul style="list-style-type: none"> ○ USB Type A Female socket ○ 5-Pin Mobile Adapter cables (1 nos) ○ O/P Voltage: 5V ±4% ○ Max Current: 3A per socket ○ Excellent load regulation
Music Player	<ul style="list-style-type: none"> ○ Not applicable 	<ul style="list-style-type: none"> ○ FM/USB/TF/MP3/AUX input ○ FM Range: 87.5-109Mhz ○ IR Remote Control ○ 3W Built in Speaker ○ S/N ≥ 75dB ○ Distortion ≤ 0.15%
AC Charger	<ul style="list-style-type: none"> ○ 9V 1A AC-to-DC adapter ○ SMPS Power Supply ○ 1m cable with DC socket ○ Charging time: 8 hours 	<ul style="list-style-type: none"> ○ 15V 1.5A AC-to-DC adapter ○ SMPS Power Supply ○ 1m cable with DC socket ○ Charging time: 8 hours
Environmental	<ul style="list-style-type: none"> ○ Operating Temperature 0-50°C ○ Storage Temperature -10°C to 60°C 	<ul style="list-style-type: none"> ○ Operating Temperature 0-50°C ○ Storage Temperature -10°C to 60°C

Available Models & Accessories

GPS-SB-U-A	SunBox Ultra - 2x3W LED Bulbs with 3m cable each, 6V 4.5Ah SMF Battery, AC Charger
GPS-SB-U-B	SunBox Ultra - 2x3W LED Bulbs with 3m cable each, 6V 4.5Ah SMF Battery, 3W Solar Panel
GPS-SB-U-C	SunBox Ultra - 2x3W LED Bulbs with 3m cable each, 6V 4.5Ah SMF Battery, 5W Solar Panel
GPS-SB-S-A	SunBox Supreme - 3x5W LED Bulbs with 3m cable & dimmer each, Mobile Charger, 12V 9Ah SMF Battery, AC Charger
GPS-SB-S-AM	SunBox Supreme - 3x5W LED Bulbs with 3m cable & dimmer each, Mobile Charger, 12V 9Ah SMF Battery, AC Charger, MP3/FM Player with 3W Speaker & Remote Control
GPS-SB-S-B	SunBox Supreme - 3x5W LED Bulbs with 3m cable & dimmer each, Mobile Charger, 12V 9Ah SMF Battery, 15W Solar Panel

GPS-SB-S-C	SunBox Supreme - 3x5W LED Bulbs with 3m cable & dimmer each, Mobile Charger, 12V 9Ah SMF Battery, 20W Solar Panel
GPS-SB-S-D	SunBox Supreme - 3x5W LED Bulbs with 3m cable & dimmer each, Mobile Charger, 12V 9Ah SMF Battery, 20W Solar Panel , MP3/FM Player with 3W Speaker & Remote Control
GPS-SB-AC-6	AC Charger - 1A - 230V AC to 9V DC - Suitable for charging SunBox Ultra on Mains
GPS-SB-AC-12	AC Charger - 2A - 230V AC to 15V DC - Suitable for charging SunBox Supreme on Mains

Tips & Best Practices

Lamp Height	For better area coverage and illumination, LED lamps must be installed at a height of 8-10 feet or more.
Lamp Protection	LED lamps should only be connected to the SunBox unit they came with. Do not insert DC LED bulb in an AC socket. This will instantly damage the bulb due to excess voltage and will not be covered in warranty!
Keep Charged	Ensure that the unit is always fully charged by keeping the Solar Panel connected to the unit. Make sure the Solar Panel does not have any shading; else its output power will reduce drastically. Keeping the battery fully charged will also extend the battery life.
Save Power	Your unit runs on a battery. Saving power will ensure longer backup time. Turn OFF the Bulbs & disconnect Mobile Charging when not in use. Use Dimmer to reduce brightness to save power.
Mobile Charging	Even if multi-pin connectors have been provided, charge only 1 mobile phone on each socket at a time to avoid excess drain on the battery.
Solar Panel Placement	Keep Solar Panel pointed at the Sun at all times. Keep it at a location that does not receive shade. If there's a Solar Water Heater nearby, align the panel similar to how the Solar Water Heater panels are aligned. If you are not sure, just leave it flat on the surface. Handle the Solar Panel carefully to avoid breakage of glass. Do not keep Solar Panel submerged in standing water.
Solar Panel Size	Only connect Solar Panels included with the system. Connecting a bigger Solar Panel will damage SunBox and will not be covered in warranty!
Product Care	Please keep SunBox in a cool dry shaded place. Avoid direct contact with water. Battery Recycling: Lead acid battery must be properly recycled to avoid environmental damage. Please return old battery to an authorized battery dealer. Always use genuine replacement battery for long backup. Contact us for replacement battery.