

BOSS Kit Sundaya Charging Station

On request • 10/2015

BOSS-CONCEPT

Off-Grid solar power systems can be an important factor to support rural development in areas that are not connected to the electricity grid. The Phaesun BOSS-solutions target specifically the commercial sector in non-electrified areas. BOSS stand for **Business Opportunities with Solar Systems**. The Phaesun technical

team develops innovative solutions together with component manufacturers and partners in the target countries. The systems are well adjusted to local needs, designed with high quality energy efficient loads which makes them robust with little maintenance needs.

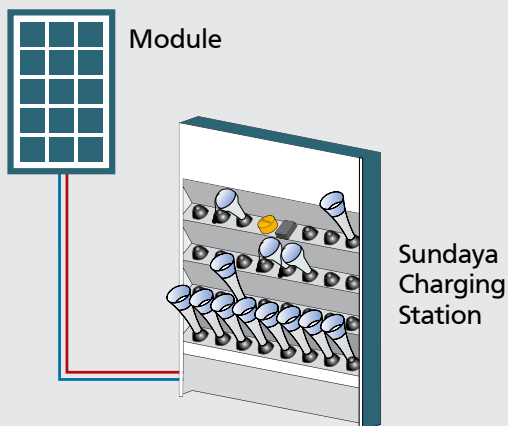
The Sundaya product range includes the innovative Ulitium and T-lite lamps. These LED-lamps with integrated Li-Ion batteries can lightent entire rooms and are therefore completely independent lighting solutions for Off-Grid areas. The lamps can be charged with small single solar modules, with an AC-adapter from the grid or by connecting them to the Sundaya Charging Station. The Sundaya Charging Station can charge 30 lamps of the Ulitium or T-lite series at the same time.

The Sundaya Charging Station can be served directly by the solar panel without the use of a battery.

System sizing is according to the following data:

- Irradiation zone: 4 kWh/m², day

In addition there is the possibility to combine the system with the BOSS Kit Port Able. That offers the possibility to charge lamps also at night or during bad weather periods.



Amount	Components
1	Sundaya Charging Station
1	Solar module 150 W
1	Cables and accessories
1	Support structure for solar module
Art.No.	On Request

Technical Data
Ulitium Charging Station Sundaya
max Vmp 19 VDC Plug-In for 30 T-lite or Ulitium lamps

Generate income with BOSS solutions!

BOSS solutions specifically target the commercial sector in non-electrified areas. Local entrepreneurs use the power of the sun to offer services and generate a business out of this. BOSS-solutions have the potential to develop the commercial sector in rural areas in a

sustainable way as they provide income sources on a longterm basis. The following graphs show different business scenarios with the BOSS Lamp Charging Station.

Assumptions for the business scenarios:

The BOSS Charging Station can serve 30 Lamps at the same time. The scenarios assume a solar irradiation of 4 kWh/m²/day, which refers to the minimum irradiation in most African countries.

With 2 x 85 W solar modules, the system generates 680 Wh/day (which would serve more than 40 lamps). Therefore the system sizing includes a puffer for days with less sunshine.

Business Scenarios: Lamp Charging Station

Scenario I: The clients had bought their own lamps. The business just takes in mind the fee for charging. The complete charging station has investment costs of 520,00 \$. 25 lamps are charged per day, 6 days a week.

Prices:

Lamp charging: 0,10 \$

→ weekly income: 15,00 \$

The investment costs of 520,00 \$ are amortized after a period of 34 weeks = less than 1 years

Scenario II: The solar shop owner rents the fully charged lamps, but he keeps the ownership of the lamps. Therefore his investment costs include 100 lamps (50 T-Lite and 50 Ulitium) and the charging station with total investment costs of 4.750,00 \$. During one week every lamp is rented once.

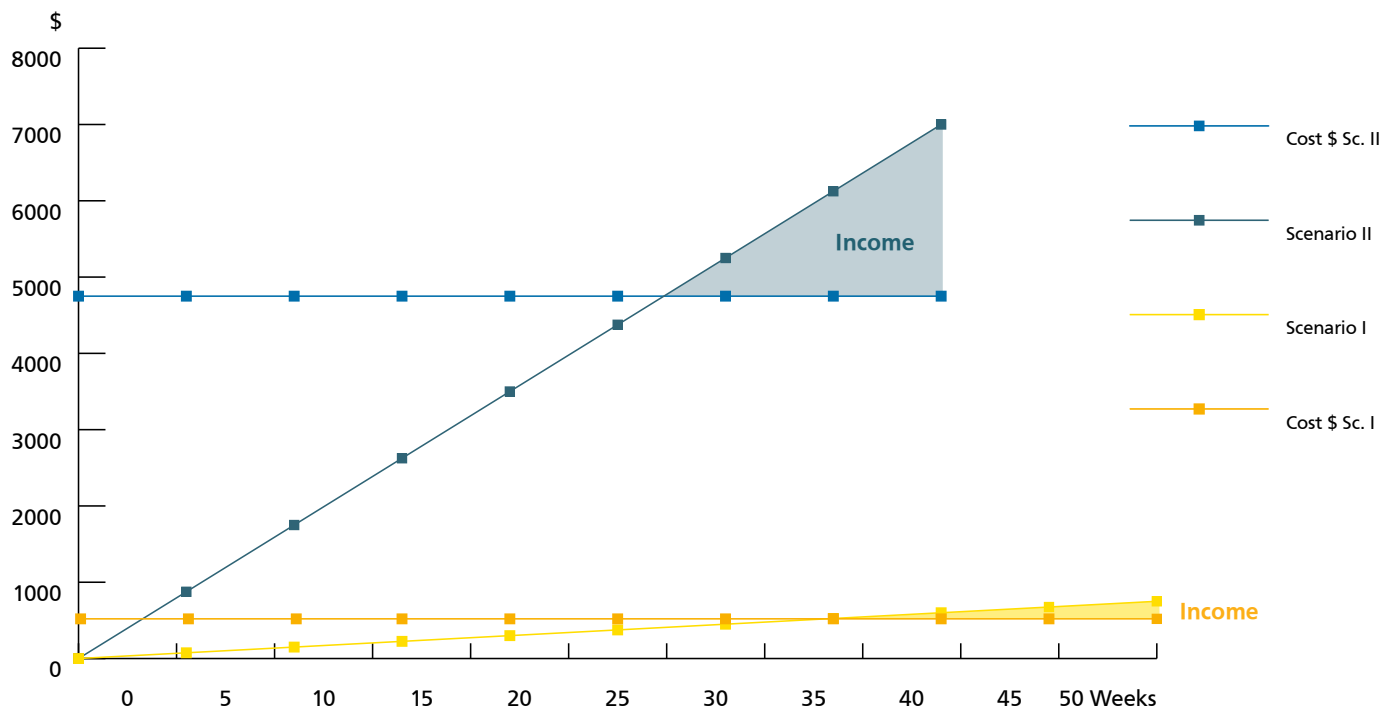
Prices:

Rent of fully charged Ulitium: 2,00\$

Rent of fully charged T-Lite: 1,50\$

→ weekly income: 175,00 \$

The investment costs of 4.750,00 \$ are amortized after a period of 27 weeks = 1/2 year



Please note:

These are assumed business scenarios with the lamp charging station used in southern Africa. We are happy to assist you with the development of specific business

scenarios adapted to other irradiation groups, different price levels and modified charging stations. Please ask our sales team for the checklist to find the best charging solution for your individual needs.