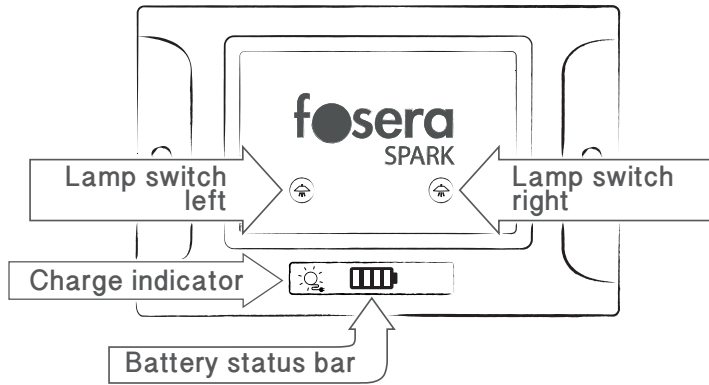


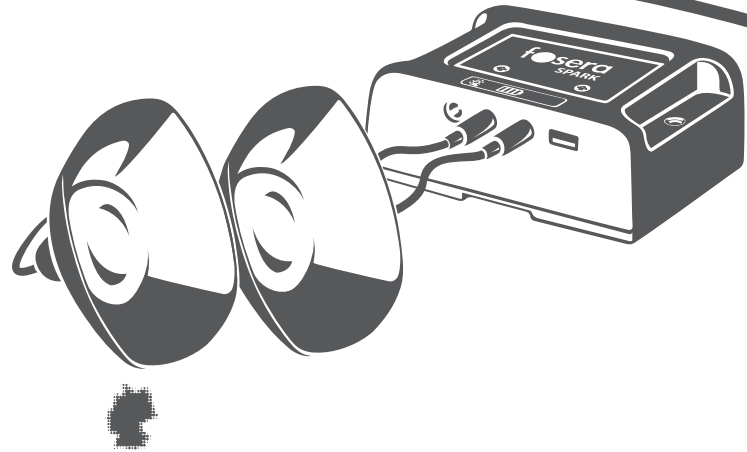
Overview

The Fosera SPARK system comes with two lamps that are dimmable. The brightness of the lamps can be adjusted between 15%, 50% and 100% by pushing the lamp button switch.



fosera SPARK

User Manual



Engineered in Germany
Made in Thailand

The Fosera SPARK system comes in a tiny package but packs some advanced features.

The Fosera SPARK is designed to power two lamps and charge a mobile phone in an ultra-efficient manner while maintaining the same high-quality standards Fosera is known for.

Fosera Solarsystems GmbH & Co KGaA

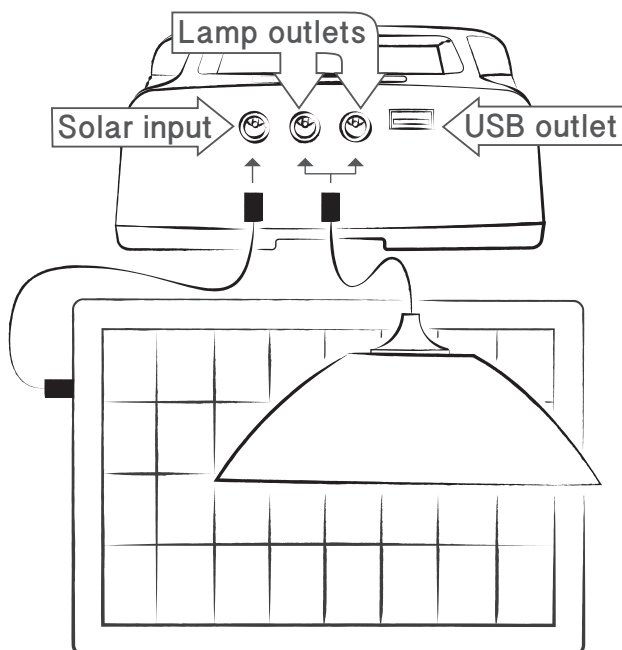
Beim Muehlbach 3 • 89171 Illerkirchberg • Germany

Tel.: +49 7346 9246973 • info@fosera.com • www.fosera.com

Additional power

This versatile solar home system can also charge a mobile phone or power a radio.

USB charging is possible through one USB port. The USB port automatically turns on if the system is operating. During low power operation USB charging is disabled. The USB cable is not included in the set.



Installation

1 Place the solar panel in direction of the sun for maximum performance.

- Avoid any shading of the panel.
- The angle should be at least 15 degrees to ensure that the rain can wash dirt from the panel.
- Make sure that the solar panel is securely mounted to withstand heavy winds and storms.
- Clean the panel regularly.



2 Mount the Fosera SPARK on the wall.
Indoor use only!

3 Place the lamp at your desired location. Make sure the cable is not pulled too tightly. If you need to extend the cable please use a cable provided by Fosera.

4 Connect the solar panel to the yellow socket of the Fosera SPARK system.
Connect the two lamps to the lamp sockets. As soon as the solar panel is connected a light will indicate that the battery is charging.

Fosera appliances are designed to last a long time and are extremely efficient.

The appliances can therefore be used for many hours every day.

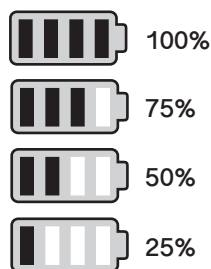
Fosera appliances can operate at any voltage of the system and in a wide range of temperatures.

All appliances are designed for indoor use with the exception of the solar panel.

Protect them from rain and direct sunlight.

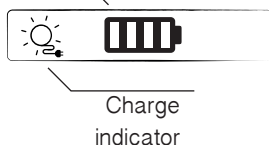
Energy

Battery state of charge:



When either of the lamp button switches is pressed the battery status bar lights up.

Battery status bar



Charge indicator

Low energy mode:



Low energy mode ensures that even if the battery is getting low, some charge is still left over for lighting. This occurs by switching off the USB outlet and only allowing the two lower lighting settings.

Trouble?

The Fosera SPARK is protected against short circuit and over current.



If an error occurs, all LED's will blink.

Please disconnect all loads.

If a failure occurs, the system will restart automatically after a few seconds.

	Fosera SPARK 10	Fosera SPARK 20	Fosera SPARK 30
Solar runtime*	7:00 h	12:30 h	17:45 h
Battery runtime*	7:00 h	14:00 h	21:15 h

Light Output Level	100%	* Mobile charging reduces runtime of the Fosera Spark
Luminance	100 lm	

Solar charge indication

The Fosera SPARK system has the ability to show changes in the input current from the solar panel, by pressing one of the lamp switch buttons. This is a useful feature that can help you notice if there is shading on the solar panel, reducing its output or if the orientation is not good.

Green stands for high charging power, orange stands for medium charging power and red stands for low charging power.

Please note – in the mornings, evenings and shady or bad weather conditions the indicator could be orange or red. However if it is in the middle of a bright sunny day and the indicator is orange or red than this could indicate that shading is occurring on the solar panel.

Specifications

	Fosera SPARK 10	Fosera SPARK 20	Fosera SPARK 30
Battery capacity	3.8 Ah	7.6 Ah	11.4 Ah
Solar panel	4 Wp	6 Wp	10 Wp
Solar charge indicator	The state of charging current from the solar panel is indicated by red, orange and green light		
Battery type	LiFePO ₄		
Lamp type	Comes with two high efficiency LED 100 lumen lamp with three brightness settings 15%, 50%, 100%		
Charge controller	Overcharge, deep discharge and over current protection		
Battery indicator	4 stage battery charge indication		
Low energy mode	Automatically switches to low energy mode to ensure always some energy is available for light. In this mode USB charging is switched off and only low power settings on lamp are allowed		

Security advice/ maintenance



Do's:

- Place the solar panel in direct sunlight for maximum efficiency.
- Clean the solar panel from time to time to ensure proper power output.
- Keep all Fosera products in a safe place and make sure the panel is installed securely, so it can not fall down.
- Protect the battery box from rain and direct sunlight. Indoor use only.
- Keep the battery box and the appliances clean.
- The ideal temperature for the functional capability of all fosera products is between 0°Celsius and 50°Celsius.



Dont's:

- Do not expose the system to any liquids or rain.
- Do not open or repair any component of the solar system by yourself. This should be only done by an authorized technician. Otherwise the warranty will be void.
- If the cables are damaged, make sure that they are repaired or replaced.
- Do not use loads and appliances that are not designed or certified for the system by Fosera (except for the USB port).
- Only use the provided panels to charge the battery. Other panels or chargers will harm the system and therefore result in a loss of warranty.
- The system components, including the solar panel, are not fire resistant. Keep away from fire.
- The battery contains a high amount of electrical energy. It is important that all short circuits are prevented.

Recycling information

Do not throw any of the components or the controller box into the regular trash when discarding. Please recycle to help minimize pollution and to protect the global environment. All Fosera components used for manufacturing the system are recyclable. For more information on the Waste from Electrical and Electronics Equipment (WEEE) regulations, please visit the following webpage:

http://ec.europa.eu/commission/index_en



Warranty

We trust in the quality of our products.

All Fosera battery boxes, lighting products and PV modules come with 3 years warranty. During this period we guarantee that our products are free from defects in material or workman ship.

Please contact your dealer or local Fosera sales agent if you experience any problems with the product. Your local dealer will then assess the defect and decide whether the product can be repaired or has to be replaced. Fosera is not responsible for any consequential damage or damage that exceeds the value of the product. A warranty repair does not extend the warranty period. Appliances, like radio, TV, PAYG remote or fans are not included in the overall Fosera warranty for electronic components and may have different warranty terms. The warranty becomes invalid if the device is used other than intended by the manufacturer. This warranty does not cover failures caused by incorrect installation, set up or unusual use. The warranty is also void in case of repairs by any unauthorized or untrained person.

For support please contact your local retailer or our headquarters via warranty@fosera.com. Please enter the name and, if possible, the serial number of the product and the date of purchase.