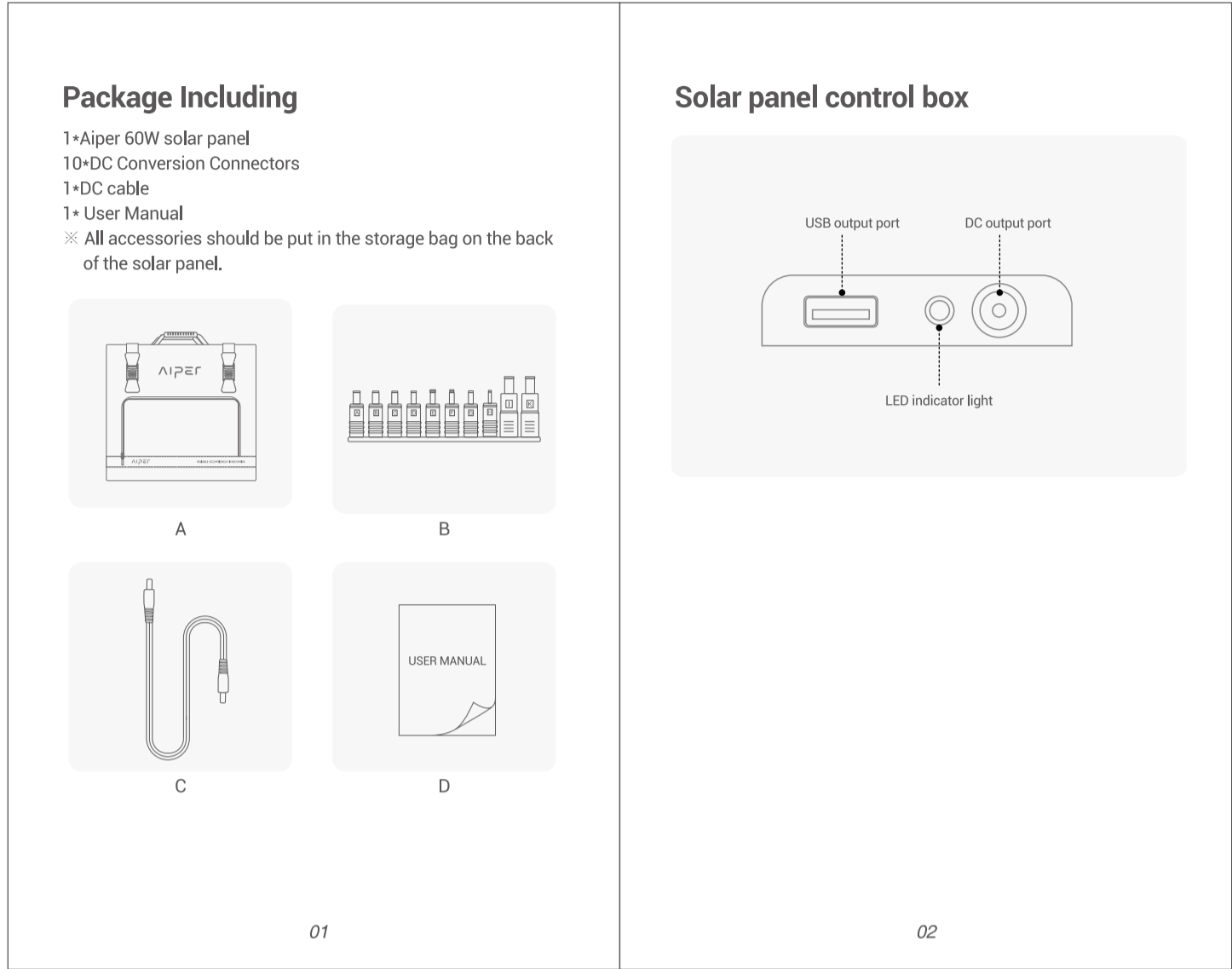




### Introduction

Thank you very much for purchasing our solar panels. This instruction manual is for the purpose of recording the important information for the safe use of this product. Before using this product, please read this instruction manual carefully. Besides, after reading, keep this manual in a place where you can read it at any time.

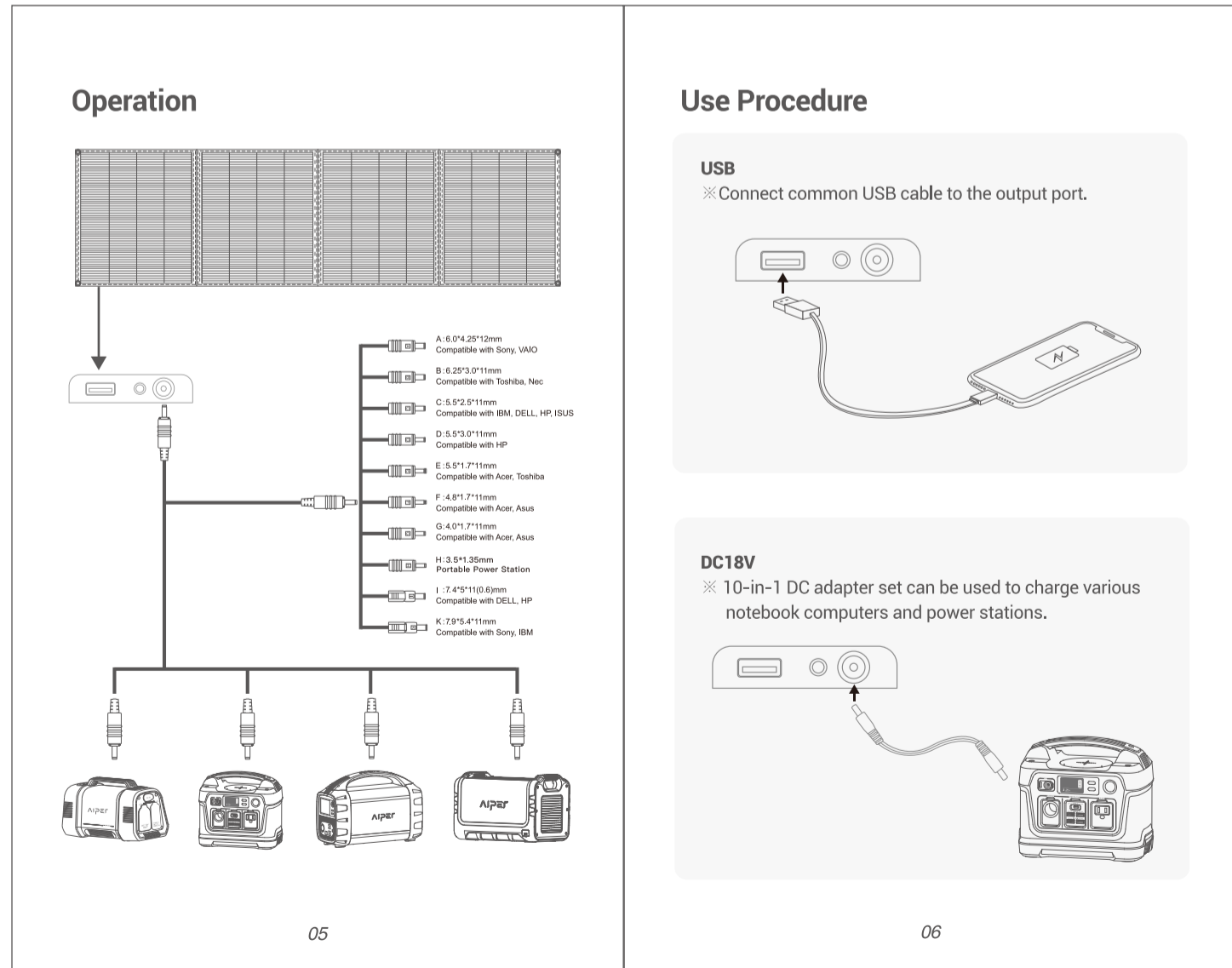


### Solar Panel Specifications

Type	Foldable
Model	SP60
Battery type	Monocrystalline
Battery conversion efficiency (maximum)	25%
Nominal maximum output	60W
Nominal working voltage	18V
Nominal working current	3.3A
Unfold dimension	1410x372x2mm
Fold dimension	352x372x35mm
Working temperature	-20°C~60°C (-4°F~140°F)
Weight	Around 2.8kg
Output port	USB/DC

### Setting method of solar panel

- Open the solar panel and make it exposed to direct sunlight. (Orientation: 100% southward or 80~85% eastward/westward. Do not place the solar panel northward. Angle: The solar panel should be placed in different angles in different places, and the efficiency is about 20~30% southward.)
- Please confirm voltage and light intensity of the control box.
- Connect electronic equipment to the solar charger.
- Please do not place electronic equipment in a place exposed to direct sunlight or in an overheated place but in the pocket of the panel or in a shady place.



### Frequently asked questions

- Why it cannot be used to charge electronic equipment?**  
Has electronic equipment or output interface been connected well? Plug it again.  
  
Does Aiper SP60 solar panel face the sunlight in the correct direction? After the position of the sun is confirmed, please readjust the direction.  
  
Is there rubbish or dirt on the surface of solar panel? Please clean the surface of solar panel using soft cloth.  
  
Is the solar panel charged in the shadow of trees, telegraph poles and other obstacles? It should be charged outdoors or in a well-lighted place in Sunday weather.
- Confirm the use environment or weather.** The generating capacity is low in cloudy and rainy weather. The generating capacity in cloudy weather is 1/3-1/10 of that in sunny weather and the generating capacity in rainy weather is 1/5-1/20 of that in sunny weather.
- What is the difference between "monocrystalline silicon" and "polycrystalline silicon" in battery type?**  
Monocrystalline silicon battery and polycrystalline silicon battery are produced using different methods. Generally the former has better performance and higher price. The latter has lower price, greater loss of crystals and poorer performance.
- Can the solar panel generate power in cloudy or rainy weather?**  
Yes, it can, even though it generates less power than in sunny weather. The generating capacity in cloudy weather is 1/3-1/10 of that in sunny weather and the generating capacity in rainy weather is 1/5-1/20 of that in sunny weather.
- Does the generating capacity of solar panel battery module change with mounting direction and angle?**  
Mounting direction should be 100% southward, 80-85% westward and westward, it should not be northward.

The angle differs in different areas. The optimal angle should be 20 - 30° southward.

- What is the difference between nominal output and actual output of solar panel?**  
The nominal maximum output power (rated output) of solar battery is a value calculated by JIS (Japanese Industrial Standard Committee) as per the specified "standard state". "Standard state" means that surface temperature of solar battery module is 25°C and sunlight intensity is 1000 W/m<sup>2</sup>. Generally actual output is lower than the nominal maximum output power due to the following reasons:  
① Own errors  
② Installation environment  
③ Characteristics of solar battery  
④ Dirt on the panel surface  
⑤ The generating capacity decreases due to energy loss. In fact, the output power is only 70 - 85% of the rated power when the solar power system runs even in sunny weather. Thus, the output power is actually 80% of the rated power.

### Precautions for Use

- Do not disassemble, repair, or modify the unit. Decomposition, repair, and modification will not only prevent the product from functioning properly, but may also result in failure to use it at all.
- Do not use, maintain, or place it in a hot place such as near a fire, or in a hot sun. This may cause fire, burns, or injury; or cause equipment deformation, malfunction, performance degradation or shorter life expectancy.
- When the surface of the solar panel is stained with dirt, the sunlight cannot be fully received, resulting in weak power generation. Please wipe the surface of the solar panel with a soft cloth to keep the surface clean.
- Do not drop things on the glossy surface of the solar panel or get a scratch.
- In order to ensure that the light receiving surface (board surface) of the solar panel can receive sunlight for a long time, please place it to the south. Do not place in shadows around obstacles (especially trees, poles, etc.).
- Please do not use this product as a toy for children.
- Please do not connect medical equipment directly related to human life or equipment that may cause personal injury on a dedicated circuit.
- This product is IPX4 waterproof, but it can not be used in rainy days.

### Warranty

This product has passed our strict product inspection. If the product fails under normal conditions of use, it will be repaired or replaced with a defect-free product under this warranty, so please contact the email described in the instructions.

However, even during the warranty period, the following conditions are not covered by the warranty.

- Failures caused by improper use in conditions other than those described in this manual.
- If the name and seal of the dealer are not marked in this instruction manual.
- If this manual is modified without the approval of the seller.
- Failure or damage caused by improper handling by the customer, such as a fall or vibration during transportation or improper movement of the customer.
- In the event of failure or damage caused by natural disasters such as fires, earthquakes, and floods.
- Improper use or in the case of repairing or modifying the product without consulting our company.

※ When you request a return, please contact our dealers after checking with "Frequently Asked Questions" pages.

**CUSTOMER SERVICE**  
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