

# Violetta Solargear VS12-07CL

## Operating Instructions

Thank you very much for purchasing our product. Please read this manual thoroughly before using this product, and retain it for future reference in order to use the product safely, and to make the most of its features. If you use other products together with this product, please read the operating instructions of those products thoroughly before use as well.

### Product Summary

IP65 dust and waterproof mobile PV system designed for powering a broad range of mobile applications incl. notebook PCs and camcorders. Made with advanced technology, craftsmanship and minimal design for the ultimate portability, toughness, weather resistance, ruggedness and reliability.

### Applications

Designed for powering a broad range of mobile applications incl. notebook PCs and camcorders with widely available 12V DC-AC inverters or 12V DC-DC converters.

### Features

- Single crystalline silicon solar cells with 17% efficiency for the maximum power generation.
- Ultra thin and light yet tough, weather resistant and rugged solar panel made of carbon composite substrate and UV resistant polymer.
- Built-in **Violetta VH12-2000L** Ni-MH battery with superior charge/discharge performance at low temperature, excellent overcharge endurance and long service life for general applications at low temperature.
- IP65 dust and water proof polycarbonate battery compartment with a high performance vent filter for air permeability.
- Glass-filled nylon 12V cigar lighter receptacles with dust and water proof caps for simultaneous power supply up to 2 appliances.
- IP65 dust and water proof illuminated switches for solar power indication and battery status indication.
- Aluminum/ABS tilt stand/handle for adjusting the angle of solar panel at every 30 degrees, and for easy carrying.

### Important Safety Instructions

**Caution** Please follow the instructions below. It may cause damage to this device, leakage, fire or burst of the built-in battery, and injury to people in case you do not follow.

- Charge only **Violetta VH12-2000L** Ni-MH rechargeable battery.
- Connect only 12V DC-AC inverters or 12V DC-DC converters to the receptacles.
- Do not allow metal objects to touch the receptacles.
- Do not short circuit, or disassemble this device.
- Do not put this device into water.
- Do not leave this device near fire.
- Do not leave this device in enclosed spaces.
- Stop charging in case of leakage from the battery.
- Stop charging in case the battery becomes unusually hot.

### Important Note

We are not responsible for any physical damage to the appliances, any loss of the memorized data, any interruption of the business, and any loss of the business opportunities caused by this product.

### Specifications

- Max. output of solar panel\*: 7.3W (18.0V 406mA)
- Nominal capacity of built-in Ni-MH\*\*: 24.0Wh (12.0V 2000mAh)
- Charge time of built-in Ni-MH\*: approx. 8 hours
- Max system output: 72.0W (12.0V 6.0A) / 2 outlets total
- Recommended system output: ~20.0W / 2 outlets total
- Operating temperature (charge)\*\*\*: -20°C - 55°C
- Operating temperature (discharge)\*\*\*: \*30°C - 70°C
- Operating temperature (storage)\*\*\*: -20°C - 35°C (less than 6 months)  
-20°C - 30°C (less than 1 year)
- Dimensions (WXDXH): 214.5X280.0X61.0mm
- Weight: approx. 1.6kg
- Accessories: Product label with serial number X 1  
Vent filter for battery compartment X 5  
Dust and water proof 12V cigar lighter plug X 1

\*Panel temperature 25°C AM1.5 1kW/m<sup>2</sup>

\*\*Discharge at 0.2C to 10.0V at 25°C

\*\*\*No freezing

### About Accessories

- Stick the product label at your preferred position on the lid of the battery compartment or on the back of the solar panel. Note that the label is weather resistant and durable, and due to strong adhesion, it cannot be easily peeled off for repositioning.
- Replace the vent filter at the same time as the built-in battery to prevent it from being clogged by dirt and dust. Replace it more often if regularly used in dirty or dusty environments. The vent filter is stuck on the inner bottom of the battery compartment. After taking out the battery from the compartment, peel off the old filter and stick the new one at the same position.
- You can make a dust and water proof connection with your 12V DC-AC inverter or 12V DC-DC converter while in use by replacing your cigar lighter plug to the dust and water proof plug. Note that the input current of 12V DC-AC inverter or 12V DC-DC converter must be less than 10A due to a 10A fuse built-in the plug.

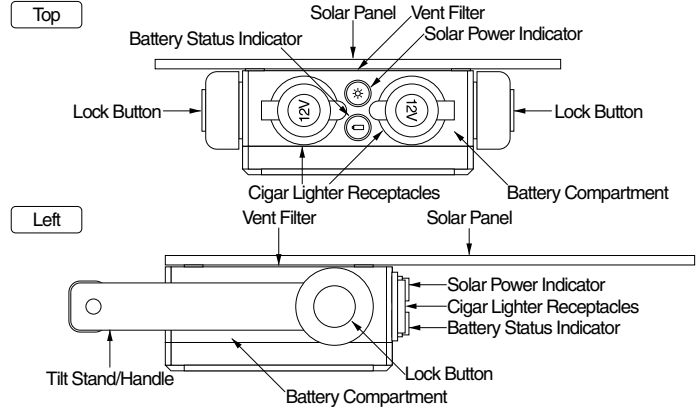
### Warranty

- 2 years from the date of purchase (1 year for built-in battery)

### Expected life

- 10 years or more (excl. built-in battery)

### Feature Diagram



### How to Use

#### Charging the built-in Battery

- 1 Face the solar panel to the sunlight, and charge the built-in battery. For the most efficient charging, adjust the direction and angle of the solar panel to 90 degrees in opposition to the sunrays. To adjust the angle of the solar panel, rotate the tilt stand/handle while pressing the lock button on both sides at a time, and release them at the proper angle. The stand/handle can be locked at every 30 degrees.
  - ⚠ **Note:** The whole area of the solar panel needs to be irradiated. If there is a shaded area on it, the battery cannot be charged well due to low output current.
- 2 Press the solar power indicator to check the output current. If the indicator LED lights in red, the battery can be charged by enough output current.
  - ⚠ **Note:** The solar power indicator switch is a momentary type, and it turns off once you release the button.
- 3 Press the battery status indicator to check the status of the built-in battery. If the indicator LED lights in green, the battery is charged enough to power appliances.
  - ⚠ **Note:** The battery status indicator switch is an alternate type, and it does not turn off until you press the button again. To prevent the battery from being discharged, turn off the switch when the battery status indication is not necessary.
  - ⚠ **Note:** You can also check the battery status by plugging a 12V car battery checker into one of the cigar lighter receptacles.

#### Powering Appliances

- 1 After charging the built-in battery enough, open the caps of the cigar lighter receptacles and plug in 12V DC-AC inverters or 12V DC-DC converters.
  - ⚠ **Note:** You can make a dust and water proof connection with your 12V DC-AC inverter or 12V DC-DC converter while in use by replacing your cigar lighter plug to the dust and water proof plug. Note that the input current of 12V DC-AC inverter or 12V DC-DC converter must be less than 10A due to a 10A fuse built-in the plug.
- 2 Plug appliances into 12V DC-AC inverters or 12V DC-DC converters, and power them.
  - ⚠ **Note:** You do not need to fully charge the built-in battery before powering appliances, but the operating time varies widely depending on the battery status and the power consumption of appliances.
  - ⚠ **Note:** You can extend the operating time by charging the built-in battery by the sunlight while powering appliances, but the extendable time varies widely depending on the output current and the power consumption of appliances.
  - ⚠ **Note:** In general, 12V DC-DC converters can power appliances more efficiently than 12V DC-AC inverters due to lower electrical energy loss.
- 3 Press the battery status indicator to check the status of the built-in battery. If the indicator LED lights in green, you can continue powering appliances. When the battery is discharged, the indicator LED stops lighting and it stops powering shortly.
  - ⚠ **Note:** You can also check the battery status while powering appliances by plugging a 12V car battery checker into one of the cigar lighter receptacles, or by the indicators of 12V DC-AC inverters or 12V DC-DC converters.
  - ⚠ **Note:** When you are in emergency or mission critical operations, check the status of the battery frequently.
- 4 If you have finished powering appliances, disconnect 12V DC-AC inverters or 12V DC-DC converters and close the caps of the cigar lighter receptacles.
  - ⚠ **Note:** To prevent short circuit and to maintain dust and water proof, close the caps of the cigar lighter receptacles when not in use.
  - ⚠ **Note:** To prevent the battery from being discharged, turn off the battery status indicator when not in use.

### About Maintenance

- Clean this product with a dried or dampened cloth. Do not use oil, solvents, petrol or paint thinners for cleaning.
- The life of built-in **Violetta VH12-2000L** Ni-MH rechargeable battery varies widely depending on the operating environment. Replace the battery every 2 - 5 years, or when the operating time becomes notably short.
- Replace the vent filter at the same time as the built-in battery to prevent it from being clogged by dirt and dust. Replace it more often if regularly used in dirty or dusty environments. The vent filter is stuck on the inner bottom of the battery compartment. After taking out the battery from the compartment, peel off the old filter and stick the new one at the same position.

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