Battery life of a solar-powered camera?

The battery life of a solar-powered camera varies under different operating conditions.

Next, we will introduce the battery performance of the solar-powered camera based on various test scenarios.

1. Test Scenarios and Battery Life

Testing Prerequisites:

a. **Device Information**: Model: TD-9846SP1, Version: 5.1.2.0.60398.

b. **Settings**: Motion detection, video anomaly detection, line crossing detection, and PIR event detection are all enabled on the solar-powered camera.

c. **Measurement**: The maximum value within the fluctuation range is used for calculation.

d. **Battery Capacity** :

Assuming a lithium battery capacity of 24Ah × 12V = 288Wh,
The actual usable capacity is calculated as 85% of the total, i.e., 288Wh × 85% ≈ 244Wh.

e. **Power Consumption Mode**: Defaults to low-power mode. For information on power management settings and tests for the solar-powered camera, refer to the section "Solar-Powered IPC Power Management Settings and Power Tests."

Battery Life Tests Under Different Alarm Scenarios

a. Worst-case Scenario: Continuous Alarm Triggering

- **Scenario 1**: Rainy weather, daytime 12 hours (continuous sound alarm), nighttime 12 hours (continuous sound alarm + light alarm + white light).
  Daily power consumption: 2.16W × 14h + 3.6W × 10h = **66.24Wh**
  Battery life: 244Wh ÷ 66.24Wh ≈ **3.68 days**

Note: The 2.16W (daytime) and 3.6W (nighttime) are measured under low-power mode. Power

consumption varies under different modes.

- **Scenario 2**: Daytime 12 hours (sound alarm triggered), nighttime 12 hours (sound + light alarm triggered).
  Daily power consumption: 2.16W × 12h + 3.6W × 12h = **69.12Wh**
  Battery life: 244Wh ÷ 69.12Wh ≈ **3.53 days**

Note: Data is based on continuous alarm triggering, but actual use rarely involves constant alarms.

b. Nighttime Alarms Triggered 60 Times (1 minute each, 1 hour total per day) with White Light Always On at Night

- **Scenario 1**: Rainy weather, daytime 14 hours, nighttime 10 hours.
  Daily power consumption: 1.8W × 14h + 3.6W × 1h + 2.7W × 9h = **53Wh**
  Battery life: 244Wh ÷ 53Wh ≈ **4.6 days**

Note: The power values of 1.8W, 3.6W, and 2.7W are measured as the actual power consumption for one hour of continuous operation in low-power mode. These values may vary under different power modes.

- **Scenario 2**: Rainy weather, daytime 12 hours, nighttime 12 hours.
  Daily power consumption: 1.8W × 12h + 3.6W × 1h + 2.7W × 11h = **54.9Wh**
  Battery life: 244Wh ÷ 54.9Wh ≈ **4.4 days**

c. Sleep Mode

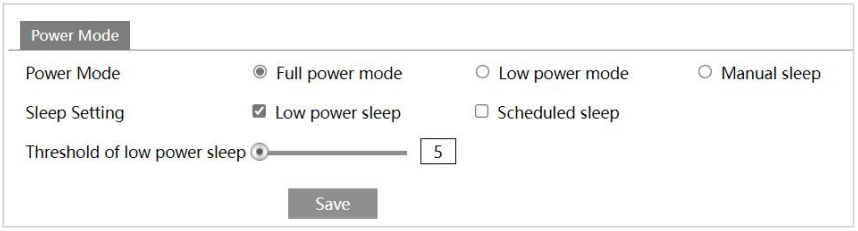
Daily power consumption: 1.8W × 24h = **43.2Wh**
Battery life: 244Wh ÷ 43.2Wh ≈ **5.6 days**

d. Default Configuration (No Features Enabled)

- **Power consumption in standby:** 12V × 0.13A = **1.56W**
- **Daily power consumption:** 1.56W × 24h = **37.44Wh**
- **Battery life:** 244Wh ÷ 37.44Wh ≈ **6.5 days**

2. Solar-Powered IPC Power Management Settings and Power Tests

Navigate to ***System → Power Management*** to select the Power Mode.



Power Mode Details

- **Sleep Mode**:

  Power consumption: 1.8W (no infrared light, white light, or sound).

  Default configuration with no features enabled: Approximately 1.56W.

In sleep mode, the device can be activated by PIR alarms and will return to sleep after the alarm ends.

- **Low-Power Mode**:

  Daytime: Only sound alarms are active (approximately 2.16W).

  Nighttime: Sound alarms, light alarms, and white lights are all active (approximately 3.6W).

- **Full-Power Mode**:

  Daytime/Nighttime: Sound alarms, light alarms, and white lights are all active (approximately 3.6W).

Q1.How does the solar-powered camera charge the solar battery through an external power source?

A1: The port that connects the battery to the photovoltaic panel is the charging port. A DC 24V power supply is required to charge the battery.

Q2.What is the approximate battery level when the product is shipped?

A2: The battery is charged to about 50%-60% at the factory, allowing for approximately 6 months of storage.

Q3.What is the battery life from production to installation for the solar-powered camera? / How long can the unopened battery be stored?

A3: The battery (individual unit) can last 3-6 months. **Note: Please Avoid allowing the battery to remain at 0% charge for an extended period, as this may trigger secondary protection, which requires factory reactivation.**

Q4. How should the battery be stored when not in use?

A4: It is recommended to store the battery in an environment with a temperature between -10°C and 30°C and humidity below 75%. The battery should be charged at least 30% before disconnecting the power supply from the camera and the battery. Additionally, recharge the battery to above 30% every six months.

Q5. Will it be difficult for the solar panel to fully charge the battery when the battery level is very low?

A5:There is no restriction; theoretically, the battery can be charged from 0% to full capacity.

Q6. Why can't the battery be charged after over-discharging?

A6: This is due to the characteristics of lithium battery cells. When fully discharged, the cells enter an irreversible state and can no longer be recharged.