SINOLTECH ENERGY LIMITED
SHANDONG SINOLTECH INTERNATIONAL CO., LTD

SPLIT DESIGN . DELICATE. SUPERIOR QUALITY

HYBRID SOLAR & WIND LED STREET LIGHT
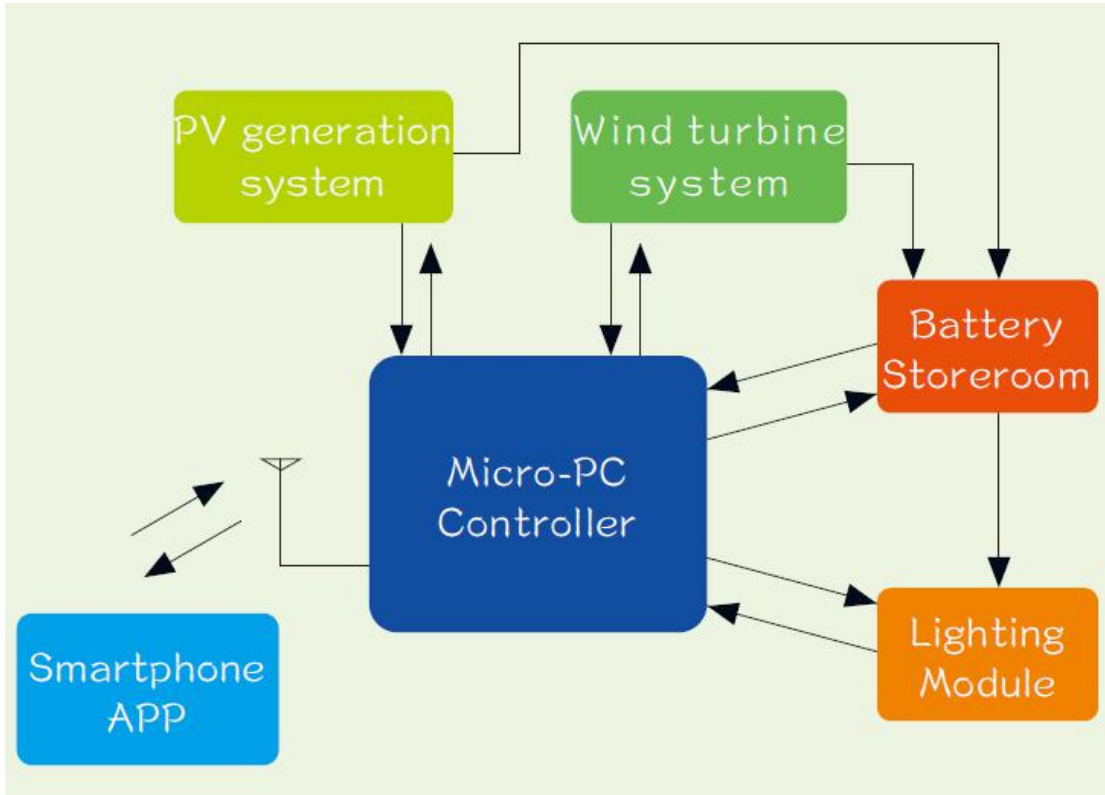### 5 Years Product Warranty

80W
Model No.: SNH-080

General information:

Based on smart solar street light, the SNH series is a new model which can utilize the natural resources - wind energy & solar energy better.

With wind turbine system, this light can be charged daytime and nighttime whenever there is wind, which can widen the applications, also to meet the Philosophy of our company - Satety, Eco-friendly and Intelligence.

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1. Product Overview

(1). Operation principle

(2). Function introduction

Using the ARM32 MCU as the main control chip, the whole system can achieve the perfect combination of PV generation module, wind turbine module, BESS and LED lighting module, also can be controlled by smarphone APP remotely, to provide a better user experience.

Features as below:

① Wind turbine module

-Starts non loaded: Minimum speed is 2m/s to start the wind turbine.

-Electronic braking system: Braking system will turn on automatically when wind speed ≥ 35m/s.

-Discharging while charging: At night, the wind turbine workes to support the LED lighting and also charge the battery.

-Read the data: Read the data of wind turbine in real-time by smartphone APP.

② PV generation module

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-Daytime and nighttime will be recognized according to the output voltage of solar panel. When nightfall, the LED lighting operates; when daytime, charge the battery.
-With MPPT technology, the battery will be charged max by the sunlight.
-Read the data: Read the data of PV module in real-time by smartphone APP.

③ LED Lighting Module
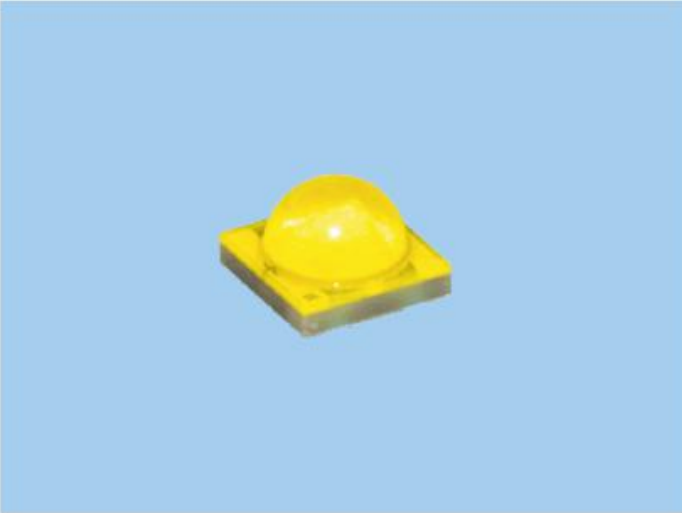
-Utilize ligh effiency LED, with integrated optical lens.
-PWM adjustment, constant current output.
-PIR motion sensor: enter energy-saving mode when nobody to prolong backup days.
-With RED pathway indicator, for warning effect and decoration at night.
(Can ajust the brightness and time of switch-on/off by smartphone APP)
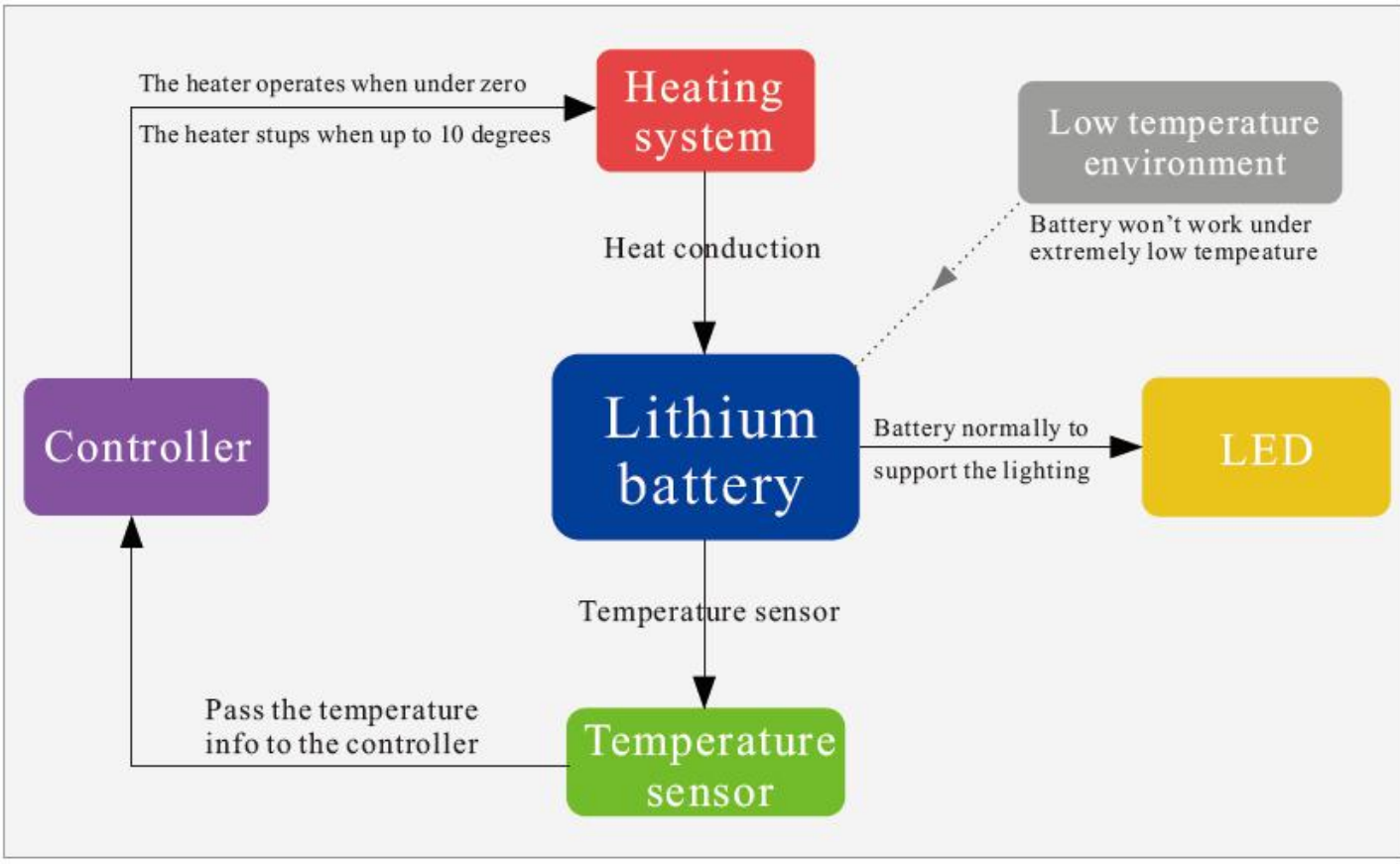
④ Battery energy storage system
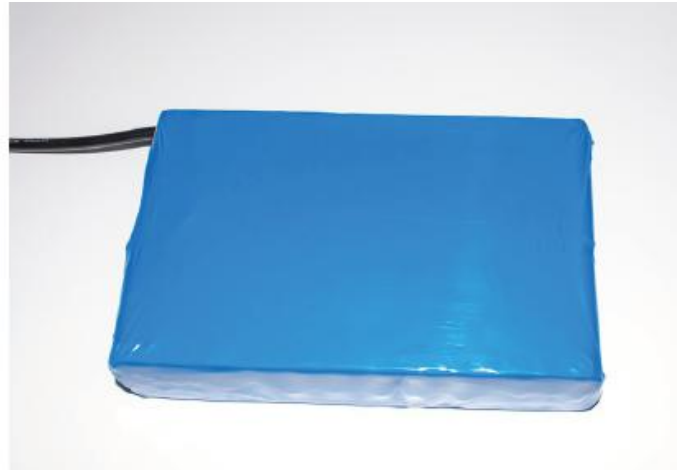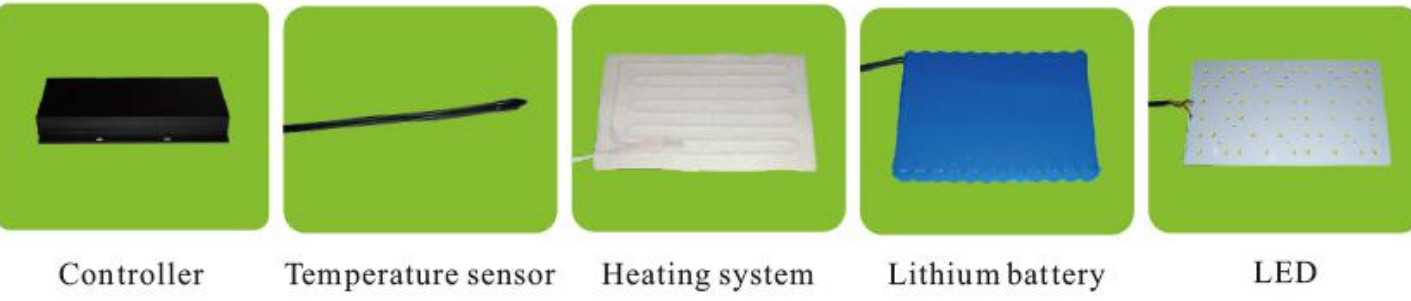

The storage of lithium battery pack can be customized:
-Inside there is a cell baffle to protect the battery, NTC temperature sensor and heater band.
-Real-time detection of the voltage and currency to avoid the overcharging, overdischarging and overcurrent.
-Real-time detection of battery temperature to start the battery heating when extremely low temperature, and stop heating when up to 10 degrees.
(Also can monitor the battery data by smartphone APP)

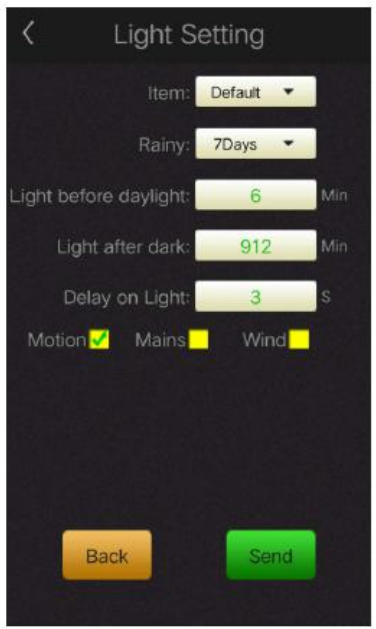## Battery heating technology under extremely low temperature

In low temperature, especially in winter, the battery will be heated to work normally with the help of smart controller, temperature sensor and heater band.

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The heater operates when under zero
The heater stups when up to 10 degrees

Heating system

Low temperature environment

Battery won't work under extremely low tempeature

Heat conduction

Controller

Lithium battery

Battery normally to support the lighting

LED

Temperature sensor

Pass the temperature info to the controller

Temperature sensor

（Technology Schematic）

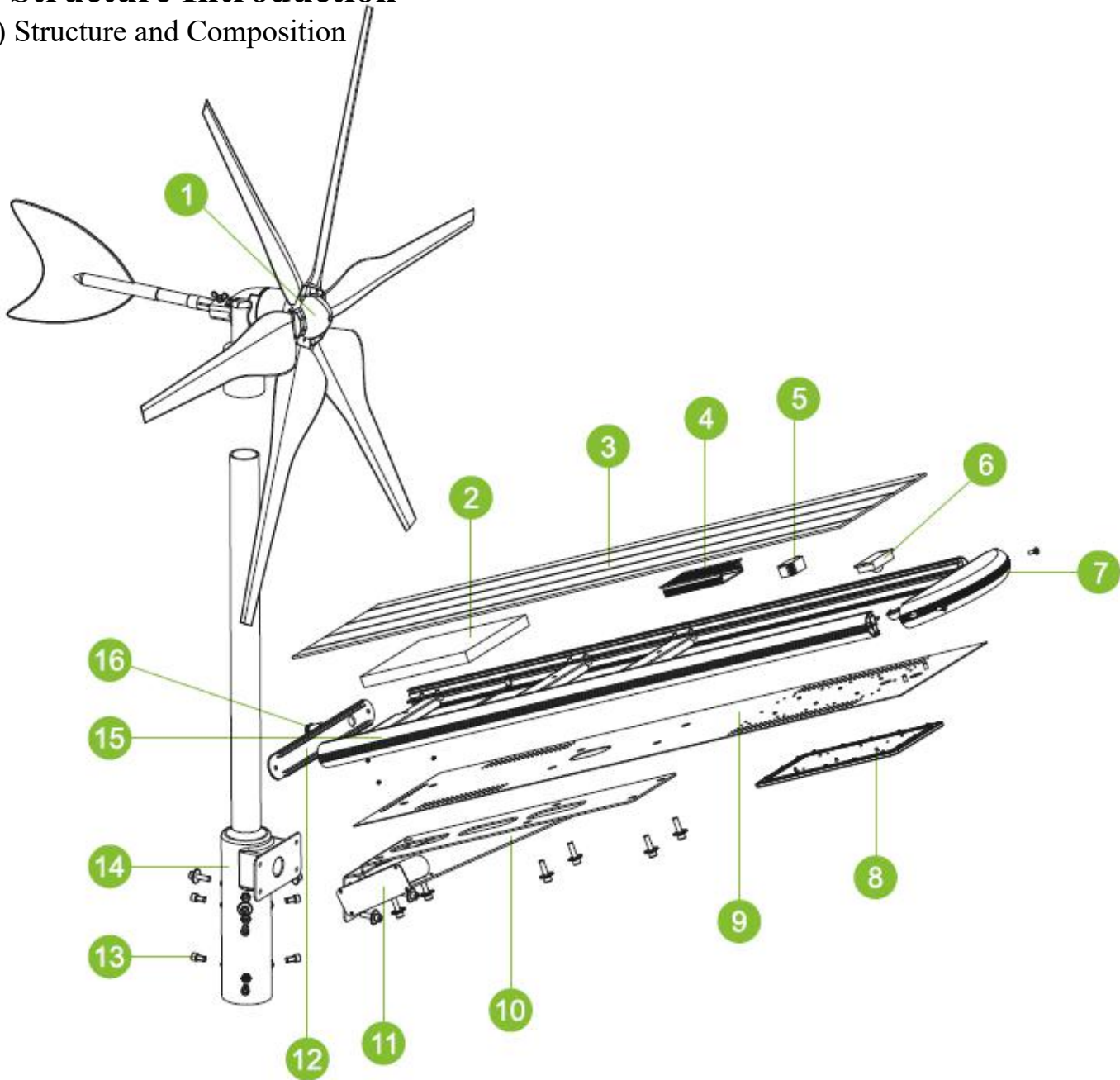| Controller | Temperature sensor | Heating system | Lithium battery | LED |

⑤ Bluetooth communication module
Support troubleshooting, read light data and control
the light switch on/off by smartphone bluetooth APP.

Connected

Connected: WLW-40
Power: 80 W
Battery voltage: 11.89 V
Current State: Charge

On/Off   Light Setting   Time Setting

Data Loading   Check   Reset

Service   More   Help

Lang   Conn   Unconn   About

Time Setting

2018 Y/07M/17D/15H/19Min

Regulate

Time Setting:
Turn on   00   H/   00   Min
Turn off   00   H/   00   Min

Back   Send

Light Setting

Item: Default ▼
Rainy: 7Days ▼
Light before daylight: 6   Min
Light after dark: 912   Min
Delay on Light: 3   S
Motion ✓   Mains ☐   Wind ☐

Back   Send

2. Structure Introduction

(1) Structure and Composition

1.Wind turbine   2.Battery storeroom   3.Solar panel   4.Controller   5.Bluetooth module
6.PIR sensor   7.Pathway indicator   8.LED lighting   9.panel   10.Bracket
11.Window plate   12.Back baffle   13.Screws   14.Connecting socket
15.Frame   16.Switch

(2) Structure details
Three parts mainly included: wind turbine, integrated solar street light, socket connecting the solar light and wind turbine;
Integrated solar street light includes solar panel, panel, frame, LED lighting module, raffles, controller, PIR sensor, bluetooth module, lithium battery and switch;
The integrated solar street light connect with bracket by screws, wind turbine connect with connecting socket by screws, then connect the bracket with connecting socket.

(3) Components
Three parts mainly included: wind turbine, integrated solar street light, socket connecting the solar light and wind turbine;

Integrated solar street light includes solar panel, panel, frame, LED lighting module, raffles, controller, PIR sensor, bluetooth module, lithium battery and switch;

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（Wind turbine）

（Integrated solar street light）

（Connecting socket）

3. Applications

**Especially for high latitude area, alpine region and area lack of sunlight but with rich wind energy.**

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4. TECHNICAL PARAMETER:

Electrical Characteristic

Rated Power	80W
Solar Panel Power	18V 65W
Wind Turbine	12V 300W
Battery Capacity	532.8 WH
Charge Time	6-8 H
Discharge Time	> 36H
Operating Temperature	-40 C~+60 C
Switch Threshold	15 LUX
Max Sensing Distance	12M
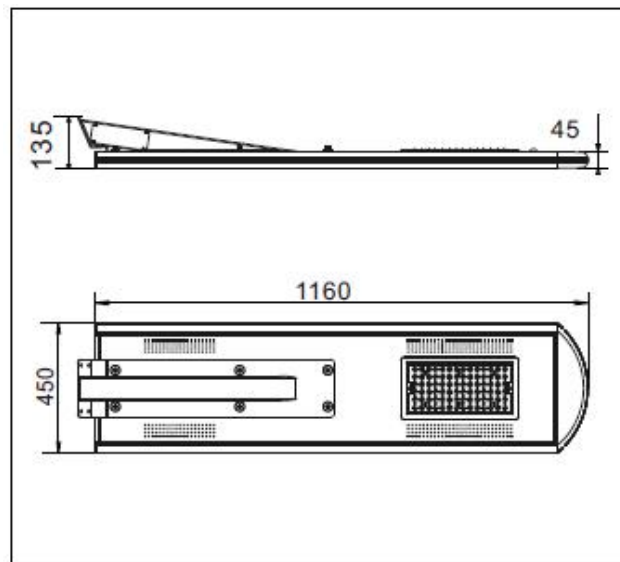
LED Parameter

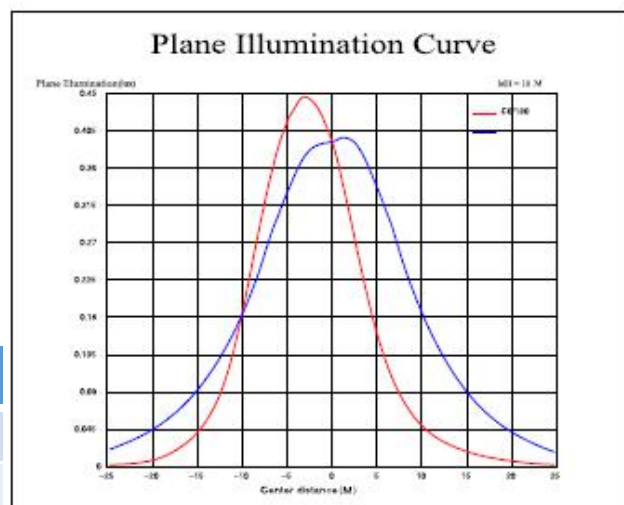|	
LED Beads	84 units(SMD-3535 LED)
LED Flux(LM)	10400-12000 LM
Luminous Efficiency(LM/W)	130-150LM/W
Light Distribution	Batwing Type
Color Temperature(CCT)	3000-6500K
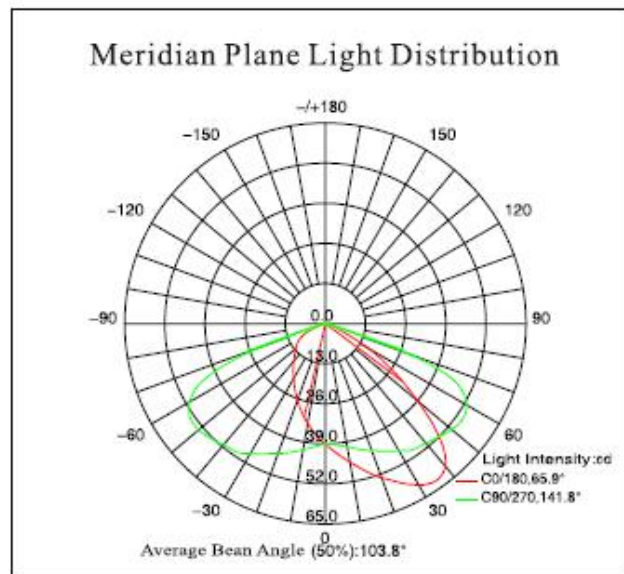
Battery Heating Specification

Voltage	9-12V
Power	10W
Temperature range	0-10 C
Temperature Threshold	<0 C or > 10 C

Mechanical Specification

Light Body Size	1160x450x45 MM
Wind Turbine Size	φ1140MM
Installation Height	9-11 M
Pole Install Distance	35-40 M

Packing Dimension

Quantity/Carton	1 set /2 carton
Carton Size(Lamp)	
Carton Size (Wind Turbine)	585x380x220 MM
Gross Weight(Lamp)	
Gross Weight(Wind Turbine)	6.7KG

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5. INSTALLATION INSTRUCTION:

Please don't install when gale weather; Please keep the blade rotating area 100% safe;
Please keep the solar panel can 100% got sunlight. Installation steps are as below:

1.Let the blade cover with "Number Mark" face down, and fix it on flade plate with screws
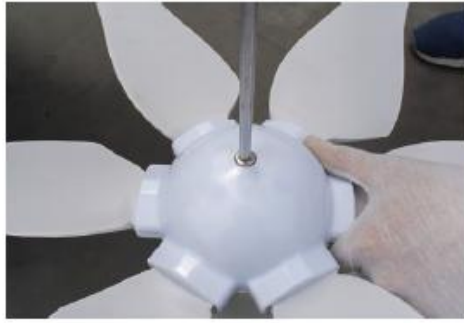
2.Put the fairing cap on the blade plate and fix it with screws

3.Remember to insert the copper tube before assembling the tail

4.Insert the wind turbine cables into the connecting socket

5.Wrap the top of the socket with non-slip mat, and insert into the wind turbine

6.Take the wind turbine cables out through the round hole

7.Fasten the three longest screws on the connecting socket

8.Insert the light pole into the connecting socket and fix it with screws

9.Fix the light on the socket by screws and insert the wind turbine cables into bracket

10.Open the window plate, connect the cables and connector

11.Put the connected parts in and lock up the window plate

12.Check all the screws fasten, and make the light pole upright, installation finish

6.General Troubleshooting

Fault Symptoms	Possibility	Suggestion
Light off at night time	The solar panel is being over exposure under light sources	Remove the light sources or adjust the installation angle
	The LED panel/beads damaged	Repair or replace the LED panel/beads
	The output source open/short	Verify if the cables connection is correct
	The battery pack abnormal	1. Examine the cables connection 2. Examine if the battery pack is insufficient charged due to bad weather, which could automatically recover in sunny days
	The solar panel damaged or blocked from any obstacles	Replace the damaged components Clear obstructions or clean the panel
	The controller malfunctioned	Repair or replace the controller if damaged
Light on at daytime	The controller malfunctioned	Verify if the cables connection is correct
	The solar panel abnormal	1. Examine the cables connection 2. Clear obstructions or clean the panel 3. Replace the panel if damaged
	The cable incorrect connect	Verify the cables connection
Bluetooth disconnect	The mobile is far away the lamp	Approach the lamp
	The Bluetooth module malfunctioned	Replace the Bluetooth module
	The APP version is out-of-date	Contact assistance for correct APP version
	The cable incorrect connect	Verify the cables connection
Wind turbine don't rotate	Fully charged, enter braking automatically	Will restore normally
	Main shaft or rotor damage	Replace them
Wind turbine shaking	Blade bent or screws loose	Replace the blade, fasten the screws
	Blade plate shaft bent	Adjust or replace the shaft

7. Maintenance and Warranty

(1). Maintenance
①Regularly clean the solar panel from dirt spots, dusting or other kinds of soiled is suggested to assure the charging efficiency
②Regular maintenance is suggested to keep the locking screws of pole are secured to the ground, and keep he pole clear from rust or corrosion
③Regular check the wind turbine working status

(2). Warranty: 5 YEARS

Disclaimer Declaration:

①The manufacturer shall not be responsible or liable for failure to perform all or any portion of this specification due to earthquake, flood, thunder or other natural hazards, and fire disaster which not caused by The manufacturer product;
②The manufacturer shall not be responsible for damage and loss caused by any unforeseen events such as theft, traffic accidents ;
③ The manufacturer shall not be responsible for loss which not complied with this product manual;
④ The manufacturer shall not be responsible for loss which caused by use in conjunction with irrelevant manufacturer products.