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OPERATION and MAINTENANCE INSTRUCTIONS

Product Name: LED Positioning Lights

Product Type: LNK-PL

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SECTION Ⅰ PURPOSE

The operation and maintenance instruction is used to guide users how to operate and maintain LNK-PL series LED Positioning lights properly. It also has full instruction of the products` functions and specifications.

SECTION Ⅱ DESCRIPTION

2.1 Introduction

LONAKO LED positioning lights are **Solar** power supplied indicating lights, with built-in rechargeable lithium battery. The lights are usually used for small leisure vessels. It could also be installed on any object requiring position indicating and applications. The two types as below Figure 2-1:

LNK-PL-RGW

LNK-PL-W

Figure 2-1: Typical function of light

The lights are completely wireless and have 3 kinds of different controlling methods:

1, Light sensor switch: the lights have an internal light-sensitive system which is able to control the light automatically turn the flashing status on at night and turn off at day time.

2, Manual switch: there is a main power switch button and a function switch button (see figure2-1) at the bottom of the lights controlled by manually.

3, Wireless remote: the remote is able to control the light to switch different function status. (See Chapter 4.1.5 and 4.1.6 for more detail)

The manual switch and remote can switch different function status of the lights such as Steady light, flashing light, SOS light and change to light sensor

controlling status (see table 2-2.1 and table 2-2.2 for more detail) according to the users` requirements. Since the lights are solar power rechargeable, they are especially suitable for the region with ample sunlight.

2.2 Product Structure

2.2.1 The LED positioning lights consists of Solar panel / LEDs and Lens / built in lithium battery and circuit board . The lights cannot be disassembled! The wireless remote will be packed with the lights. The structure is shown as below Figure2-1:

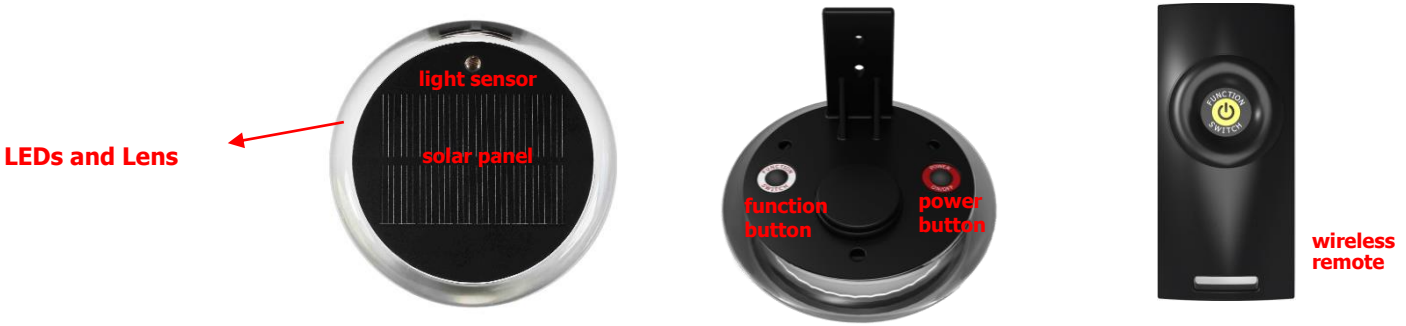

Figure 2-2 Product Structure

2.3 Technical Parameter

Parameter \ Type	LNK-PL-RGW	LNK-PL-W
Light Source	LED	
Activation of the first function	Automatic light sensor controlling	
Activation of the other functions	Manual switch and wireless remote	
Remote-controlled Distance	No less than 20 meters	
Power Source	Built-in lithium battery	
Recharging Energy	Solar power (take about 3days / 24hrs under strong sunlight to fully recharge empty battery)	
Max. Resistance Wind-force	12 degree wind	
Storing and Working Temperature	-30~+65℃(-22 ~+149℉)	

Dimension	Main body:115*73.2mm
Weight	Light and wireless remote: 225g Bracket and screws:120g
Ingress Protection	IP67 (Remote is not waterproof)
Performance	UV-resistant, Fire-resistant, Oil-resistant, Mould-proof, Corrosion-proof
Approval	CE and FCC
Lifespan	3 years under normal condition
Guarantee	1 year under normal usage & condition.

Table 2-1 Technical parameter

2.4 Function status introduction

Type / Parameter	LNK-PL-RGW	LNK-PL-W
Light Color	About 112.5° red & 112.5° green & 135° white and 360° white	360° white
Max. Visual Distance	Tricolor steady>1n mile White flashing>3.0n mile White steady>2n mile	White light>2.0n mile
Working Time	Flashing>150h SOS>20h Steady>12h	Flashing>150h SOS>20h Steady>12h
1st Function	OFF -Standby	OFF -Standby
2nd Function	White flashing light (Auto. Light sensor switch)	White flashing light (Auto. Light sensor switch)
3rd Function	Tricolor steady light	White single flashing light
4th Function	Red and green steady light	White SOS light
5th Function	White single flashing light	White steady light
6th Function	White SOS light	/
7th Function	White steady light	

Table 2-2.1 Function status

SECTION Ⅲ INSTALLATION INSTRUCTIONS

3.1 Installation Limitation

The LED positioning lights are suitable to be installed on any object requiring position indicating. Such as: yachts, fish boats, leisure boats, docks, gardens, buildings and other suitable locations and objects. The lights should be mounted at location with ample sunlight.

3.2 Installation Requirement

3.2.1 LONAKO LED positioning light should be installed on the top of ships or other applicant objects in order to ensure its maximum visibility in all directions.

3.2.2 The components for installation include 1pcs shim, 6pcs screws, 2pcs nut, 6pcs clip and 1unit anti bird thorn. The biggest two clips are fit for 1.2~1.3 inch pipe. The two middle size clips can be separately inserted into biggest clips to become one unit bracket for 0.95~1.05 inch pipe. The smallest clips can be separately inserted into the biggest clips to become one unit bracket for 0.7~0.8 inch pipe. The components and brackets are showed in below pictures as figure 3-1.

Figure 3-1 Installation components

3.2.3 Users should choose the suitable clips according to the diameter and of pipe. The biggest clip with four crew holes can be fixed with light both in vertical or horizontal direction. So users should confirm the installation direction of pipe before installation.

3.2.4 Installation process is very simple. Please operate as showed in below pictures according to the direction of pipe. If there is no suitable clip harmonic with pipe, user has to find other proper installation way to fix the light. (LONAKO also have a "L" shape fix frame solution for no pipe applicant installation, But it need to purchased separately. contact sales for more information)

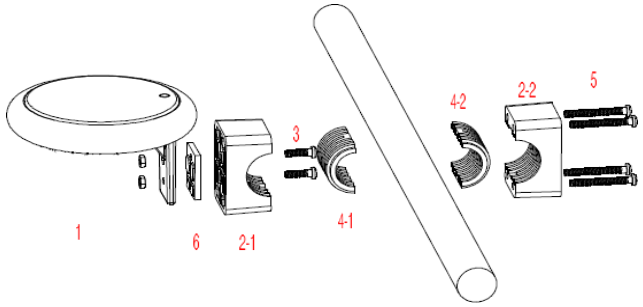

Figure 3-2.1 Horizontal direction pipe installation

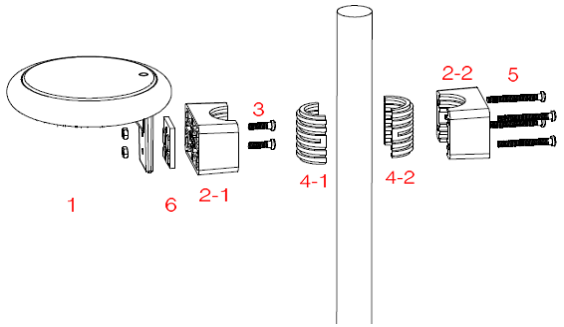

Figure 3-2.2 Vertical direction pipe installation

3.2.5 In order to avoid the birds standing on light and block the solar panel from sunlight, one unit anti-bird thorn is packed together with light. the users should set the spring spikes on the thorn as below Figure 3-3.1 . Then peel off the 3M tape on bottom of the thorn and stick it on the top of the light, which is just on red circle position shown on Figure 3-3.2 to make sure avoiding solar panel function zone and light sensor.

Figure 3-3.1 Anti-bird thorn

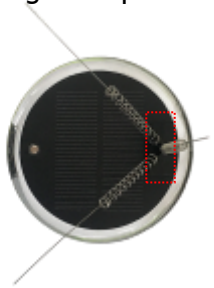

Figure 3-3.2 Anti-bird thorn installation position

SECTION Ⅳ OPERATION AND USAGE INSTRUCTION

4.1 Operation Instructions:

4.1.1 After the positioning lights are installed , user should press "POWER ON/OFF" to turn the power on before use.

4.1.2 The different functions of the light could be switch by "FUNCTION SWITCH" button or remote in a sequence of loop.

4.1.3 When the light was been set at AUTO" light sensor" level. The light will automatically turn on and output flashing signal repeatedly in the night and poor visibility weather. When visibility of weather becomes good in the day, light will turn off automatically. To be AUTO controlled, the light should

be set to "Light sensor" function first. (See detail functions sequence at table 2.2.1)

4.1.4 Except the light sensor function, the other functions will keep working unless set it to "OFF -standby" or press "POWER ON/OFF" to switch power. (See detail functions sequence at table 2.2.1 and table 2.2.2)

4.1.5 When the light placed under sunlight, the solar panel will charge the product whether the product is turned on or not. It takes about 3 sunny days (about 24 hours) to fully recharge the product, but the working hours of different functions are as follows: flashing > 150 hours, SOS light > 20 hours, **Steady light > 12 hours**. It is suggested that the user should manage the working time of steady light properly to avoid the power shortage.

4.1.6 The controlling distance of wireless remote is over 20m without any obstacle between light and remote. When the indicating LED on the remote become weak, user should replace new battery for the remote. The remote is not waterproofed.

4.1.7 Each remote matches the light it was packed with. But if the old remote is lost or broken, the user can just buy new remote to match the old light. The matching operation is as below:

4.1.7.1 First, use one hand to keep pressing the button on REMOTE and point it to the light;

4.1.7.2 Second, use another hand to press "POWER ON/OFF" at the bottom of light to turn on the light. The match should complete.

4.1.7.3 Third, press "FUNCTION SWITCH" on remote to make sure they have been well matched . If not, try to adjust the remote`s point direction and distance to the light, and repeat above two steps.

4.2 Usages Instructions

4.2.1 The LED positioning lights` flashing light function can be used as indicating-position light.

4.2.2 SOS signal light function can be used as emergency light.

4.2.3 Steady white light can be used as anchor light and assistant lighting equipment in the special situation.

4.2.4 LNK-PL-RGW is not a certified standard navigation light. It could only be used for leisure boat <7meters or for supplemental usage. Users cannot use it to replace the standard navigation light.

SECTION Ⅴ SERVICE LIFE & SAFETY

5.1 The LED positioning lights are designed as three years lifespan from the date of manufacture. It has one year warranty with propel use and under normal environment conditions.

5.2 The LED positioning lights contains Lithium batteries. These processes must be handled correctly:

5.2.1 Do not dismantle battery pack;

5.2.2 Do not make any external electrical connection;

5.2.3 Do not incinerate;

5.2.4 Store between -30℃～+65℃.

SECTION Ⅵ INSPECTION

6.1 Inspection

LED positioning lights should be inspected and clean the solar panel, light sensor and light lens every 6 months in order to ensure the efficiency of absorbing sunlight and sensitivity of distinguishing visibility.

SECTION Ⅶ MAINTENANCE

The LED positioning lights are maintenance free, but the following routine checks should be done:

7.1 Keep the original packaging of light well and do not put heavy goods on light during storage period.

7.2 The Lithium Batteries of the lights must be recharged at least one time every 3 months during storage in order to ensure the products` lifespan. Every time when the light is stored over 3 months, users should take the lights and put them under sunlight to recharge the battery for at least 8 hours.

SECTION Ⅷ REPAIR AND DISPOSAL INSTRUCTIONS

8.1 Repair Instructions

The LED positioning lights must not be disassembled and cannot be repaired. When a light is not functioning well, Users should contact the distributor

or manufacturer for assistant if the light was in warranty time .If it was not working after out of its warranty service life just dispose the expired lights and get a new one.

8.2 Disposal Instructions

Dispose of used and expired lights in accordance with local regulation. This process should be done through an approved environment disposal agent.

SECTION Ⅸ PACKAGING INFORMATION

9.1 Standard unit package shown as figure 9-1,it includes one light, one remote, one shim, six clips, six screws, two nuts, one unit anti bird thorn and one instruction. All the components are packed in a box as below pictures. The size of box is 132*122*85mm and gross weight is about 431g.

Figure 9-1 Single unit package box

9.2 Carton package: 50units per carton. 2pcs spared remote will be provided for each carton. The size of carton is 630*280*475mm. The volume is 0.08m^3 and gross weight is about 22.8kg.

SECTION Ⅹ MANUFACTURER INFORMATION

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