



## Specification of LED Underwater Light

### 1. General Introduction:

LED underwater Light is good choice both for lamination and for landscape. We also call it : LED Underwater Light;

LED Underwater Boat Light; Underwater Fish Light; Underwater Marine Light; Underwater Dock Lights; Led Aquarium Lighting; Submersible Led Lights; 12V LED Lights; Underwater Pool Light; Navigation Lights; Blue Led Underwater Lights; Fishing Lights; Exterior Light; Outdoor Lights; Landscape LED Lights;.

LED underwater light is designed with the most extreme conditions in mind with high grade stainless components to ensure the product will be resistant to corrosion. Also we use the super bright and high quality LED as light source to keep it with loner lifespan.

The underwater lights adopts High power LED/ COB/SMD as the light source, there are many advantages when compare to the halogen in ground light, such as low energy-saving, environment protection, high brightness, anti-shock, anti-vibration, purity color, and long lifespan, about 50,000 hours. This model of underwater light has fashionable in design. High quality material with 304#/316# stainless steel. Waterproof grade IP68 protection.

Underwater lights can be used for many purposes, like lighting up your home pond.

They can also be used on a boat to attract fish, or to search the bottom of a lake or pond.

**Item:** GNH-UW-

**Power:**3X1W;

**Date:** May. 7th, 2015



GNH-UW-3W-D



GNH-UW-3W-R



## 2. Product Introduction

### Characteristics

1. 304#/316#Stainless steel +transparent PC cover
2. Good heat dissipation performance and waterproof design.
3. The unique optical PMMA clear lens ensure the brightness maintenance and projection effect.
4. High quality 1W high power as light source..
5. Exquisite appearance, beautiful designed.
6. Energy saving; life span over 50,000hours
7. Voltage in AC/DC12V, safety to use for underwater or outdoor.
8. Emitting color: RGB with more than 14 types of color changing effect, single color-white, red, green, blue, yellow.
9. 6 kinds of RGB control method: Remote control, Wi-Fi Control, DMX Control, Remote & switch control, Automatic control, External control (wire control)
10. IP68 protection. High quality 316(V4A) stainless steel lamp body with good heat dissipation.

### Caution:

\*LED underwater light need to be used underwater.

\*LED underwater light requires toroidal transformer, electronic transformer is not applicable.

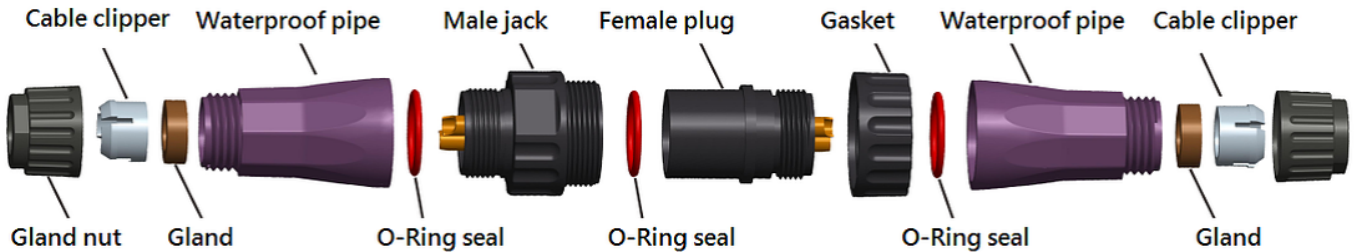
\*Cable connection must be done by professional with water-proof cable connector, and to be done in water-proof (IP68 grade) in order to avoid any water leakage through cable (wire), see samples below for reference only.

(a) water-proof connector with glue/resin





(b) Plastic water-proof cable connector

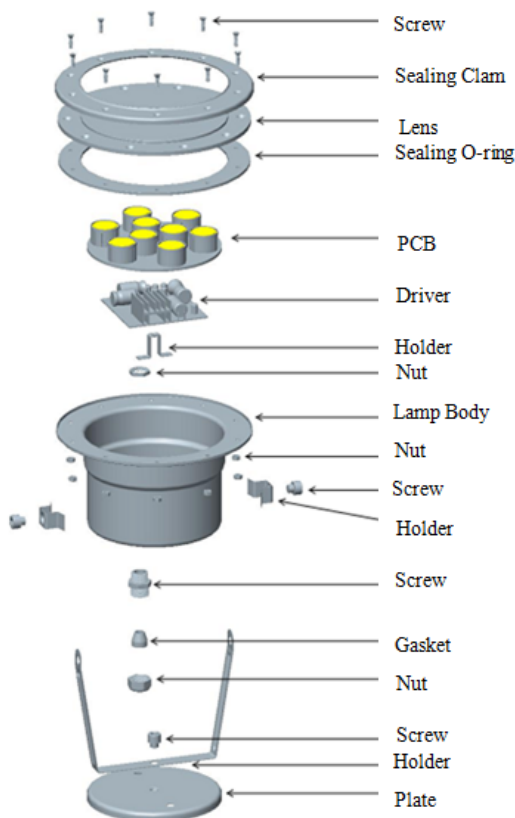


Please read the installation specifications before installation must be done in accordance with the connection diagram.

Check the circuit before installing or uninstalling, you must cut off the power supply accordingly.

When connect the power cord, you must take appropriate measures to waterproof and insulated connections.

## 2. Specifications, parameters



## Structure



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**Product Detail:**

<p>Front view</p>	<p>Model Number: <b><u>GNH-UW-3W-D</u></b> &amp; Size detail</p>																								
																									
<p>Side view</p>	<p>Illuminance</p>																								
	<p>Flux out: 106.6 lm</p>  <table border="1" data-bbox="667 1099 1385 1877"> <thead> <tr> <th>Height</th> <th>Eavg, Emax</th> <th>Angle: 41.53deg</th> <th>Diameter</th> </tr> </thead> <tbody> <tr> <td>3.281ft 1m</td> <td>21.40, 30.23fc 230.3, 325.4lx</td> <td></td> <td>2.488ft 75.83cm</td> </tr> <tr> <td>6.562ft 2m</td> <td>5.349, 7.557fc 57.58, 81.34lx</td> <td></td> <td>4.975ft 151.65cm</td> </tr> <tr> <td>9.843ft 3m</td> <td>2.377, 3.359fc 25.59, 36.15lx</td> <td></td> <td>7.463ft 227.48cm</td> </tr> <tr> <td>13.12ft 4m</td> <td>1.337, 1.889fc 14.39, 20.34lx</td> <td></td> <td>9.951ft 303.30cm</td> </tr> <tr> <td>16.4ft 5m</td> <td>0.8558, 1.209fc 9.212, 13.01lx</td> <td></td> <td>12.44ft 379.13cm</td> </tr> </tbody> </table>	Height	Eavg, Emax	Angle: 41.53deg	Diameter	3.281ft 1m	21.40, 30.23fc 230.3, 325.4lx		2.488ft 75.83cm	6.562ft 2m	5.349, 7.557fc 57.58, 81.34lx		4.975ft 151.65cm	9.843ft 3m	2.377, 3.359fc 25.59, 36.15lx		7.463ft 227.48cm	13.12ft 4m	1.337, 1.889fc 14.39, 20.34lx		9.951ft 303.30cm	16.4ft 5m	0.8558, 1.209fc 9.212, 13.01lx		12.44ft 379.13cm
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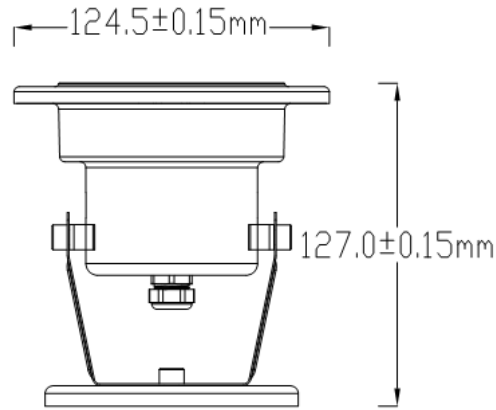
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Front view



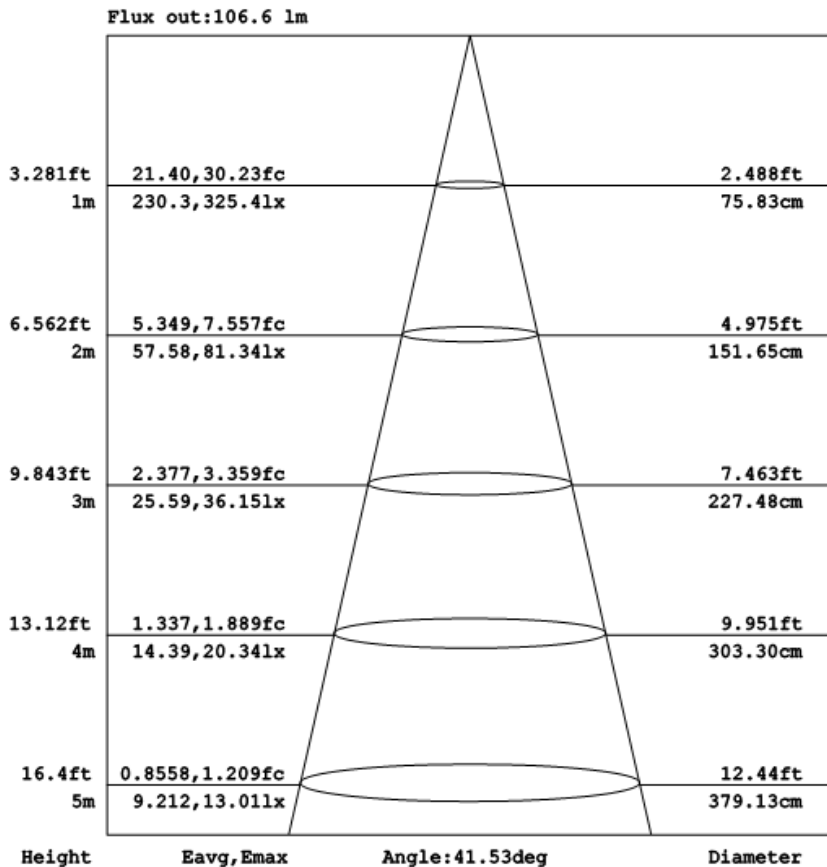
Model Number: [GNH-UW-3W-R](#) & Size detail



Side view



Illuminance



Back View





### Specification:

Item No.:	GNH-UW-3W-D	GNH-UW-3W-R
Wattage (W):	3W	3W
Voltage(V)	AC/ DC12V 50-60Hz	AC/ DC12V 50-60Hz
LED Type:	High Power	High Power
LED Quantity:	3*1W	3*1W
Color:	White, Green, Blue, Red, Yellow, RGB	White, Green, Blue, Red, Yellow, RGB
Beam Angle:	1 30° 45° 60°	30° 45° 60°
Size:	83mm(diameter) x 139mm(height)	124mm(diameter) x 127mm(height)
IP Rating	IP68	IP68
Body Material	stainless steel	316 Stainless Steel
Working Temperature:	0~40°C	0~40°C
Storage Temperature	-10~60°C	-10~60°C
RGB control	DMX control/ WiFi/ External control	Remote with RGB controller/ DMX control/ Remote & Switch control/ / WiFi/ External control

**Use toroidal transformer (12V AC according to lamp voltage), electronic transformer is not applicable for LED lamp.**



### 3. Color control way:

Single color: White (Pure white, warm white, cool white), red, Green, Blue, Yellow

RGB Control way: 5 Kinds of RGB color Change control methods

Color: Single color or RGB

(1) Single color: White (pure white, warm white, cool white), Red, Green, Blue, Yellow.

(2) RGB : 14 kinds of RGB color Change program

1. Red (solid color – red)

2. Green (solid color – green)

3. Blue (solid color – blue)

4. Red + green

5. Green + blue

6. Red + blue

7. Red + green + blue = white

8. Dynamic change: red change to green

9. Dynamic change: green change to blue

10. Dynamic change: red change to blue

11. Dynamic RGB change

Dynamic color change: from Red to Green, then Blue

12. Dynamic & Colorful change: Dynamic color change: from Red to Green, then Blue, Red+Blue, Green+Blue, Blue+Red, RGB

13. RGB fading effect . Fading from Red to Green, then Blue

14. Colorful fading effect





**1<sup>st</sup>: DMX Control way:** We have two types of controller for DMX

### (1)DMX 512 Control-first type

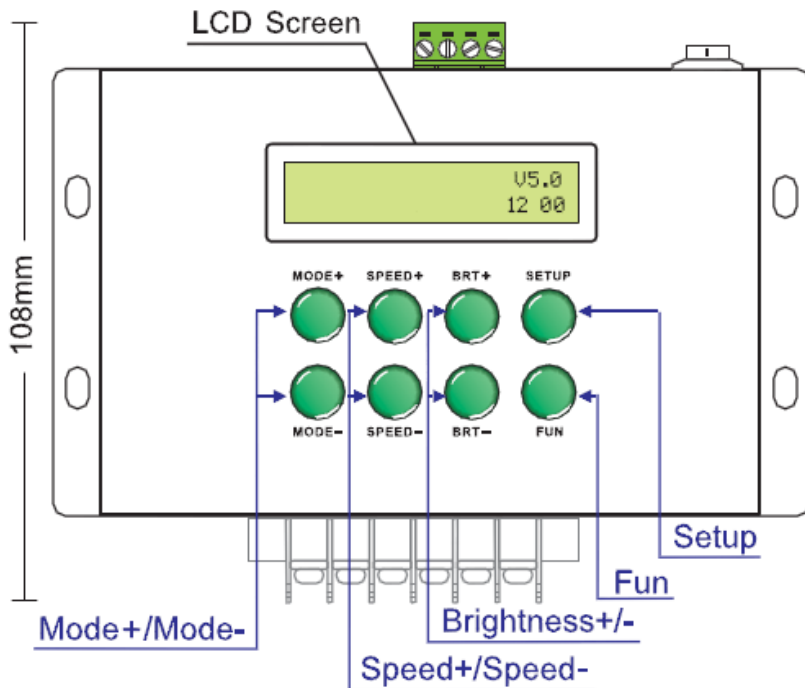
Input Voltage: 12-24VDC

Output Signal: DMX512

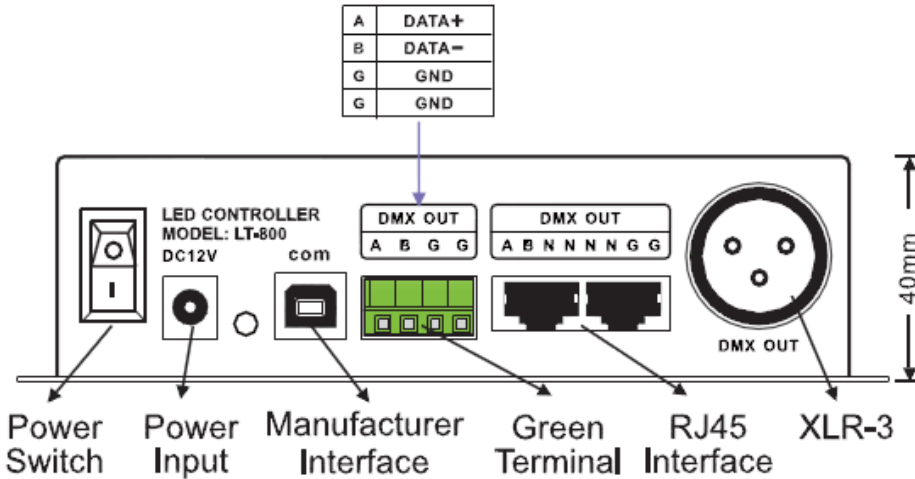
Output Loop: 1 Port



### Structure Drawing:







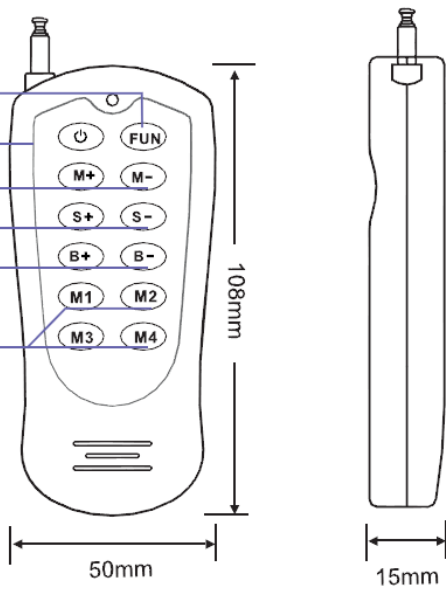
SETUP: Short press to adjust movement direction of effect; long press to enter the menu setting interface.

FUN: Short press to switch mode type;

Long press to enter the DMX addressing, meanwhile start learning ID process of RF remote.

### Controller:

- Setting Key  
Short press to switch 8 mode types;  
Long press to switch 4 mode directions.
- On/Off
- Mode+/Mode-
- Speed+/Speed-
- BRT+/BRT-
- Scene-save keys  
Press 2s to save



### RF Remote Control

Buzzer on/off: Long press "On/Off" button on the remote.

ID Learning Method:



Long press **FUN** button on the controller for 2 seconds, there is a buzzer beep, keep pressing:

Learning ID: Press any key on the remote in 3 seconds.

Cancelling ID: Press any key on the remote over 3 seconds.

### (2) DMX 512 Control-second type



DMX Controller VCC connect to power supply DC+, GND1 connect to power supply DC-

5Wires: Brown wire connects to DMX controller"VCC"

Black wire connects to DMX controller"GND1"

Yellow wire connects to DMX controller"GND2"

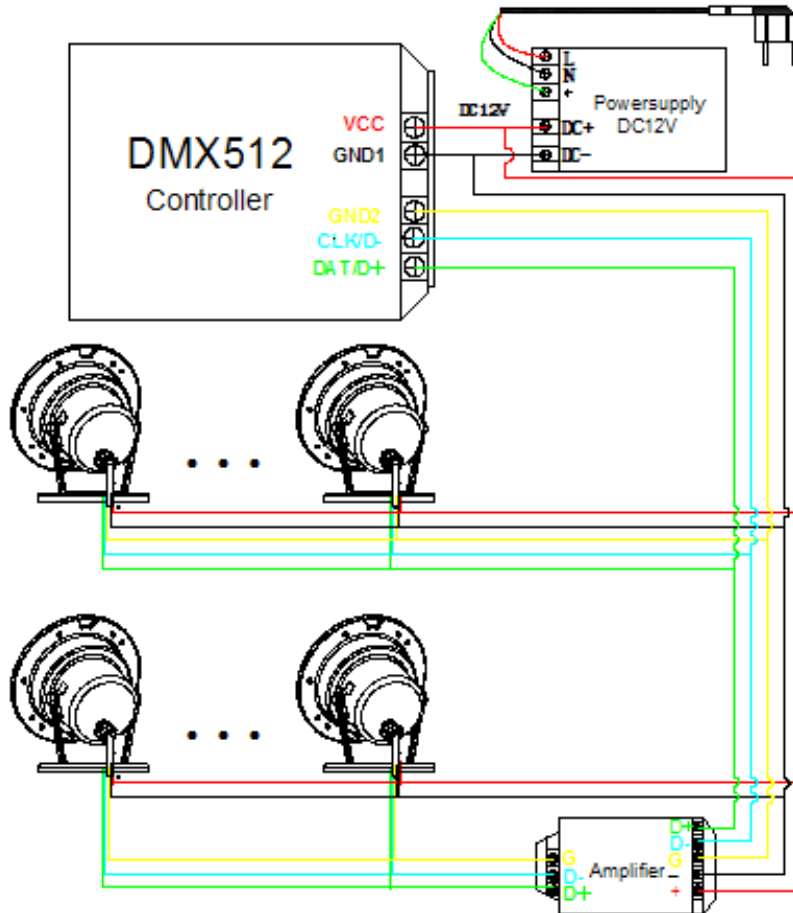
White wire connects to DMX controller"CLK/D-"

Green wire connect to DMX controller"DAT/D+"

1DMX512 controller could connect many lamps, in case of the signal is not strong enough after connect too many lights; you can use the amplifier to enhance the signal.



Diagram of DMX512 control way:



### 2<sup>nd</sup>: Remote control

#### RGB Controller



#### Remote



#### Amplifier



Input Voltage:12-24VDC

RF Remote Distance:50M

Radio Frequency:433.92MHz



### Remote controller Instruction:

Button no.	Function	Button no.	Function
1	On/off	7	Blue
2	Reset/(RGB=white)	8	R+G/G+B/R+B
3	Speed/Brightness+	9	Dynamic change: (R-G) /(G-B)/ (R-B)
4	Speed/Brightness-	10	Dynamic change: (R-G-B/Colorful Change
5	Red	11	Fading: R-G-B
6	Green	12	Colorful Fading

### RGB Controller Instruction:

Button	Function	Button	Function
On/Off:	Switch on/off	Speed/Brightness+:	increase speed or brightness
Speed/Brightness-:	decrease speed or brightness	RGB Pattern:	change RGB pattern

Simply connect live and neutral wires onto any one of wires of the lamp.

Step 1: Connect RGB controller to power line as below diagram

Step 2: Connect lamps to power line as below diagram

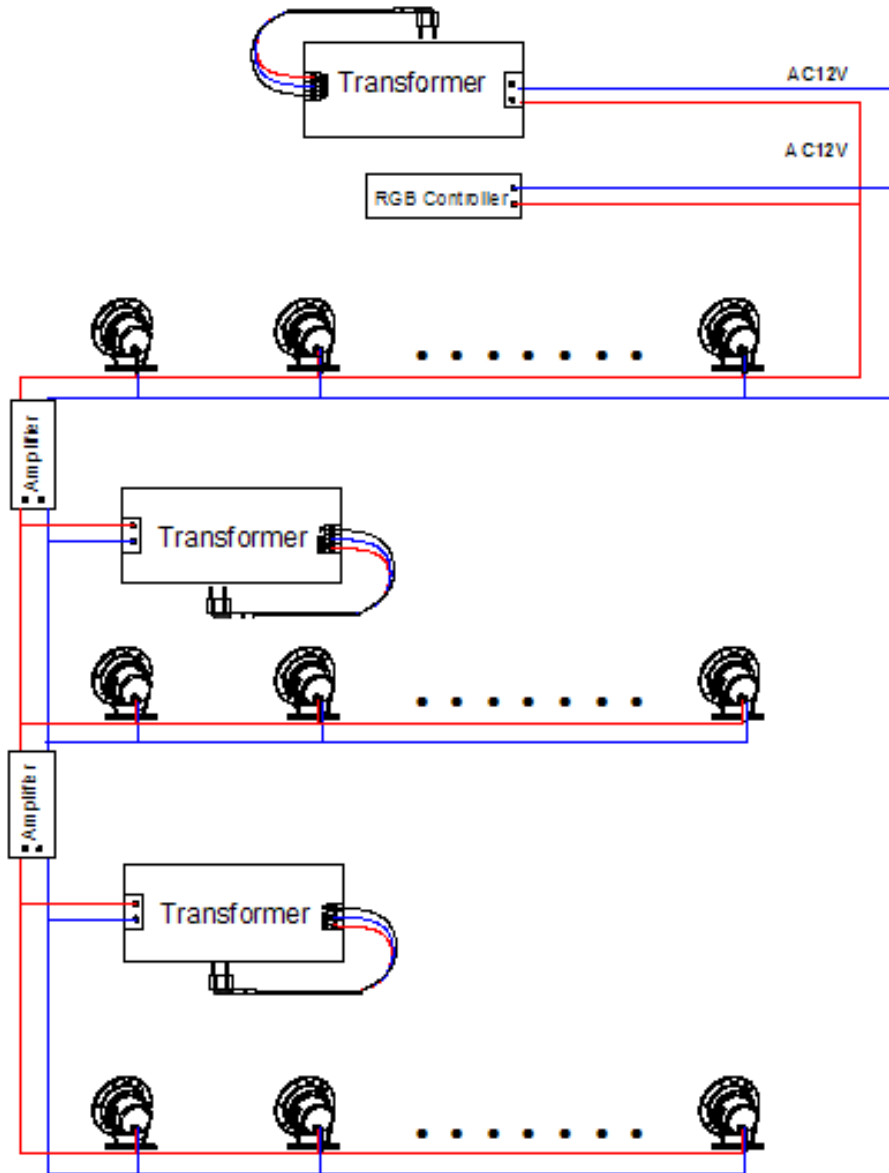
Remark: RGB signal is strong enough within 100 meters wire and 1RGB controller could connect 20pcs lamps, in case above 20pcs lamps, use Amplifier to enhance the signal, 1 Amplifier could connect 10pcs lamps, make sure the power wire is big enough to carry enough voltage (12V AC) in order to avoid voltage drop, see connection diagram of remote control way as below.



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**In order to avoid any interruption of RGB remote control system from neighbor/near area, please do following 2 steps.**

**Step (1) Remote controller match RGB controller code: connect the lamps & RGB controller, turn on power**

Press "on/off" button of RGB controller, within 3 seconds press button "2" & "12" at the same time.

RGB controller will beep in 3-5 seconds, then another longer beep appear, match-code between RGB controller and remote will be finished.



After connect the lamp and RGB controller, turn on the light, press "On/off" button of RGB controller



**Step (2) RGB controller match Lamp code**

Press "on/off" button, within 3 seconds press "Speed/Bright +" button, all the lamps will change color "Red" → "Green" → "Blue", then release the button.



Press "On/off" Button then press "Speed/Bright" + within 3 seconds

Within 3 seconds, press "Speed/Bright"



### 3<sup>rd</sup>: External Control

This control method means external control by LED RGB controller, it is 4 wires cable connection, could control RGB change pattern both by RGB controller manually and remote.



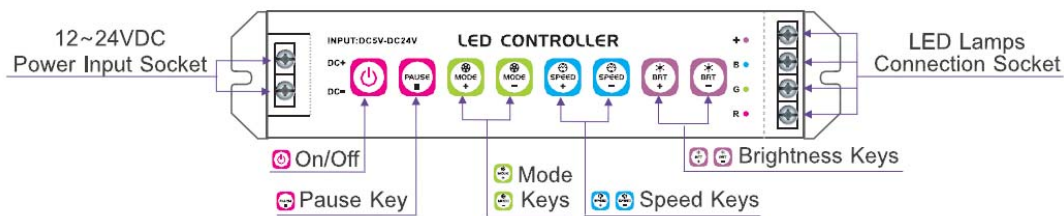
Input Voltage: 12-24VDC

RF Remote Distance: 100M

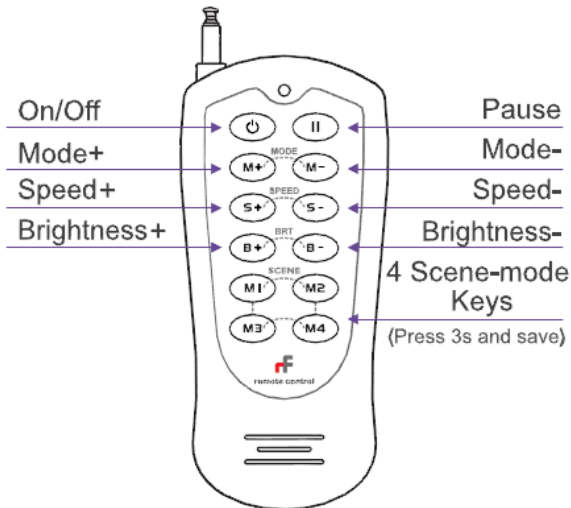
Radio Frequency: 433.92MHz

#### Detail for function Key:

8 function keys on the receiver, which is corresponding to the first 8 buttons on the RF remote: namely **ON/OFF**, **PAUSE**, **MODE+**, **MODE-**, **SPEED+**, **SPEED-**, **BRT+**, **BRT-**.







#### Other Functions:

- Press PAUSE in 3S, the buzzer can be on or off.
- Press MODE+ for 3S to auto loop play all the modes.
- Press MODE- for 3S to 4 scene modes. Merely play the changing modes, the static color will be skipped.
- Press SPEED+ for 3S, all speed change is restored to default status.
- Press SPEED- for 3S, the current change is restored to default status.

#### ID Learning Method:

Learning ID: Press "On/Off" key on the receiver for 3S, the buzzer long beep and the green light will be on, release the key, press any button on the remote, when the green light turns off means activated.

Cancelling ID: Press "On/off" Key on the receiver for 5Sm the buzzer long beep, the green light will be on and flash once, meanwhile press any button on the remote, when the green light flashes several times means ID canceled ( do not release the "On/Off" key during the process).

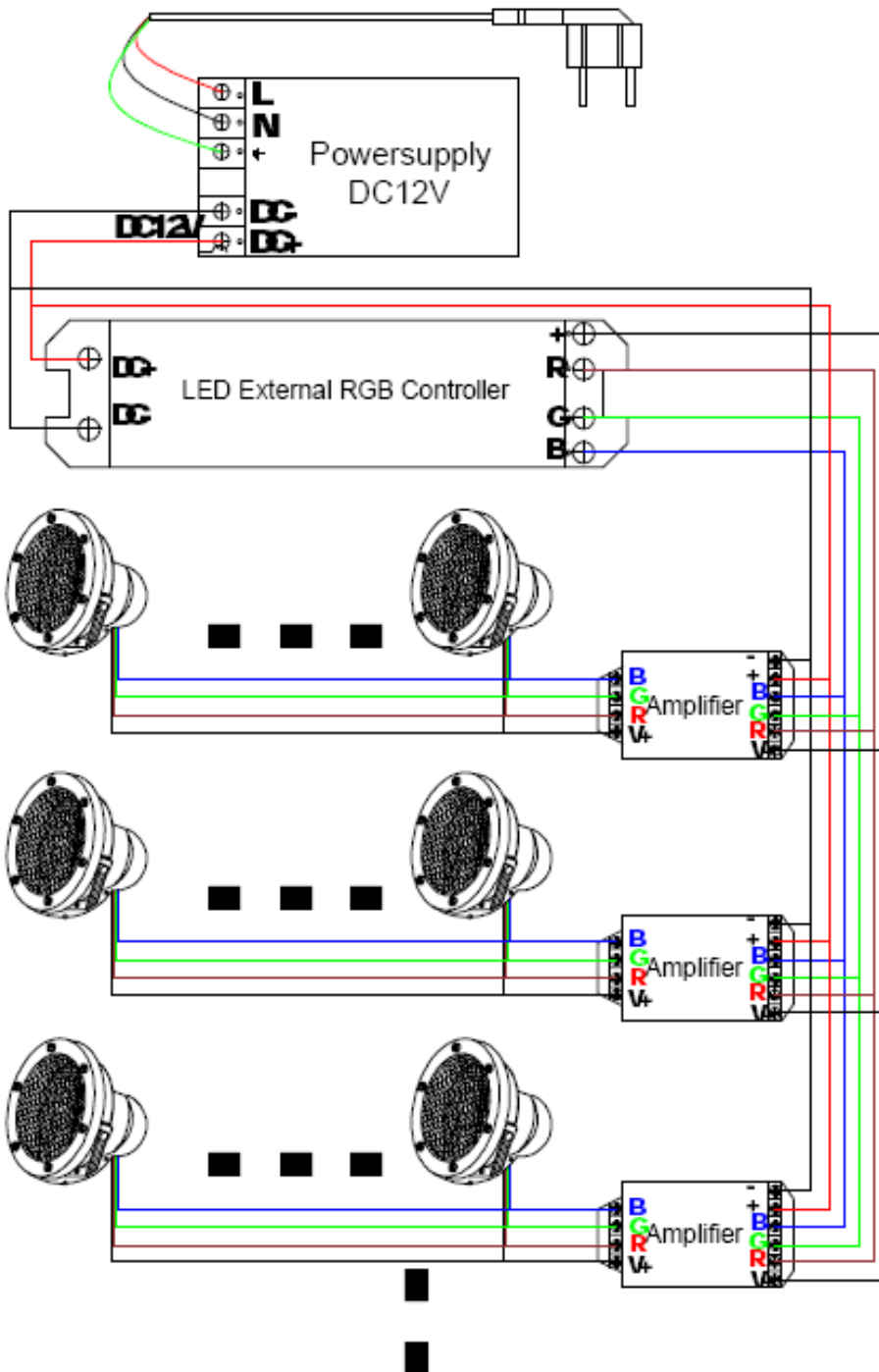
#### Connection:

Connect Power supply(12VDC) to one end(DC+, DC-) of LED RGB wire controller, then another end(+, G,G,R port) of LED RGB wire controller connect to 4 wires(V,B,G,R) of lamp as diagram below.

RGB Controller power is 200W, if total lamp wattage is over 180W, need to add Amplifier to enhance RGB signal.



Diagram of external control way:





### 4<sup>th</sup>:WIFI Control

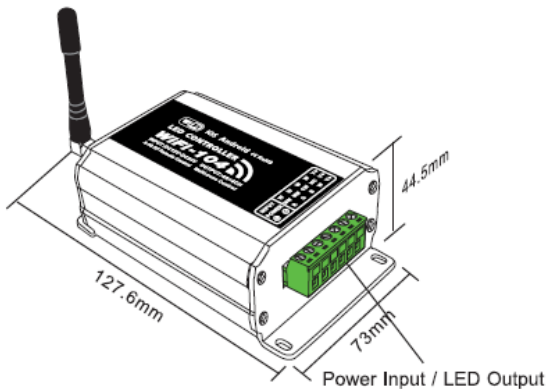


Input Voltage: 12-24VDC

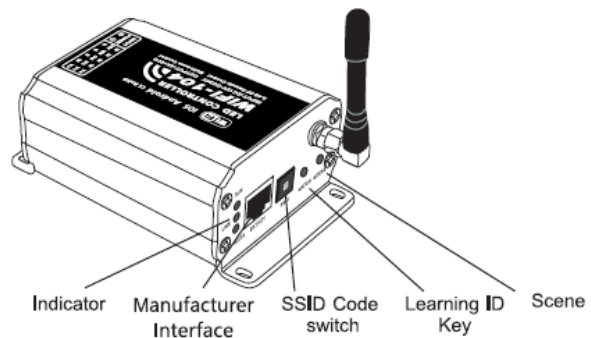
Communication Standard: 2.4GHz, 802, 11b/g/m Protocol

WIFI Control Distance: 100M (Distance of cross-eyed)

#### 1. Configuration Diagram



Side A

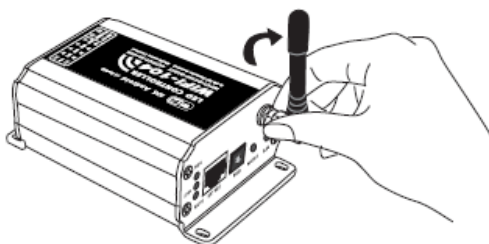


Side B

#### 2. Controller Operating Instructions

Install/Uninstall ANT

Clockwise to install the WIFI ANT, conter clock wise to take off.



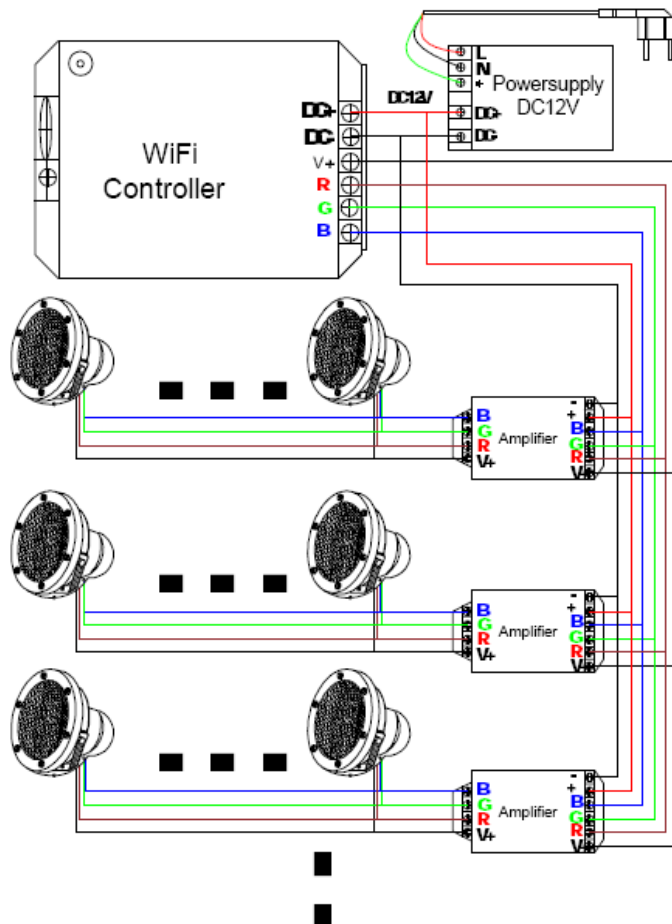
ANT installation instruction



**Indicator Light Instructions:**

Indicator Light	Instructions
Run	It flashes quickly about 25S during the electric initialization, Flashes once per second after initialization
Link	It keeps on when the mobile device connects to WIFI-104, and turns off when disconnected.
RX/TX	It turns on when the controller receives or transmits the WIFI data. Turns off in the free time.

**Diagram of WiFi control way:**

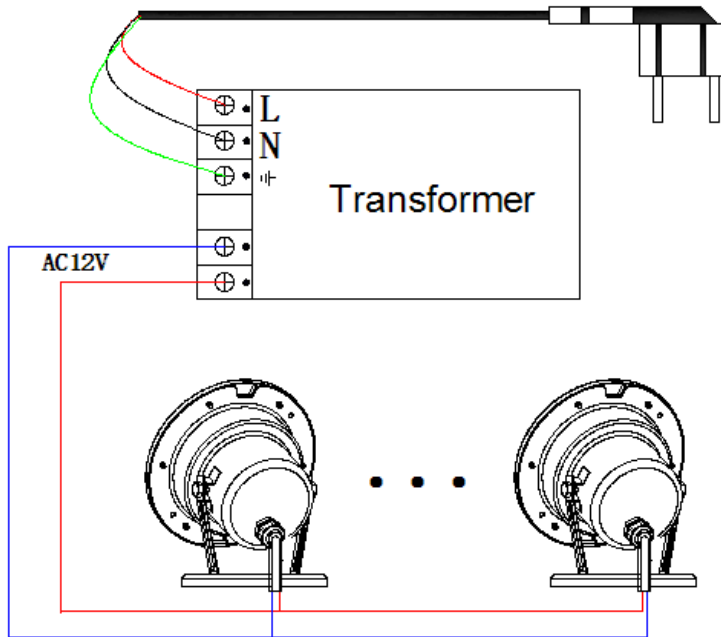




**5<sup>th</sup>: Automatic Control & Single color**

Simply connect live and neutral wires onto any one of wires of the lamp.

Diagram:

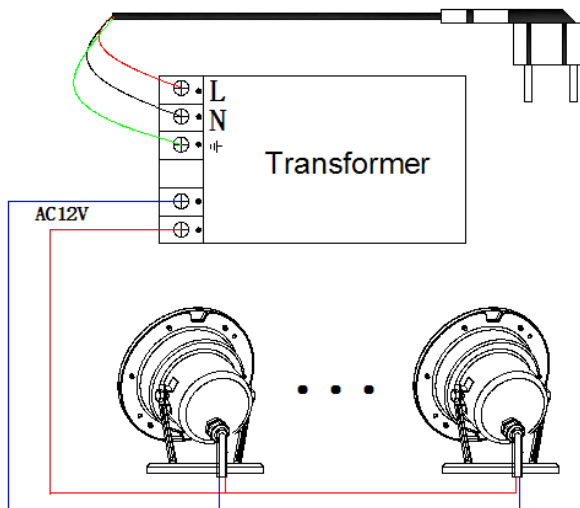


**6<sup>th</sup>. Single color-white, red, green, blue, yellow**

Simply connect live and neutral wires onto any one of wires of the lamp

**Step1:** connect lamps as below diagram

Diagram:

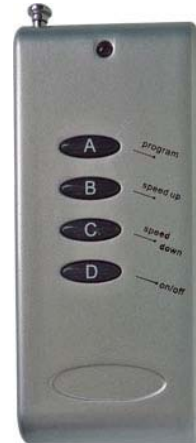




### 7th. Remote & Switch control

Instructions of The Remote Control Button			
Key	instructions	Key	instructions
A	Mode change (14 programs)	C	Slow down in "fading effect" & "Dynamic color chaging" mode -Reset the lamp by press 5S+ decrease brightness in solid color
B	Speed up in "fading effect" & "Dynamic color chaging" mode,increase brightness in solid color	D	-Switch on/off by press 1~2S

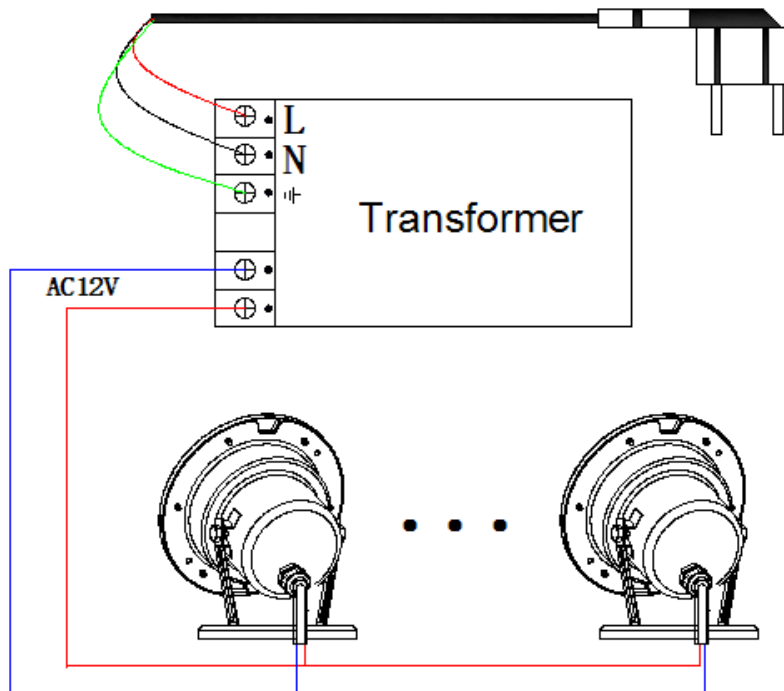
Note: Remote effective distance is 50 meters, to control lamps in distance of more than 50 meters, use switch control instead of remote control. Change mode by switch on/off.



14 RGB Programs;  
 Red, Green, Blue  
 R+G, G+B, R+B, R+G+B  
 Dynamic change: R-G, G-B, R-B, R-G-B, Colorful  
 R-G-B Fading, Colorful fading

Simply connect live and neutral wires onto any one of wires of the lamp

Diagram:





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**4.Packing way:**

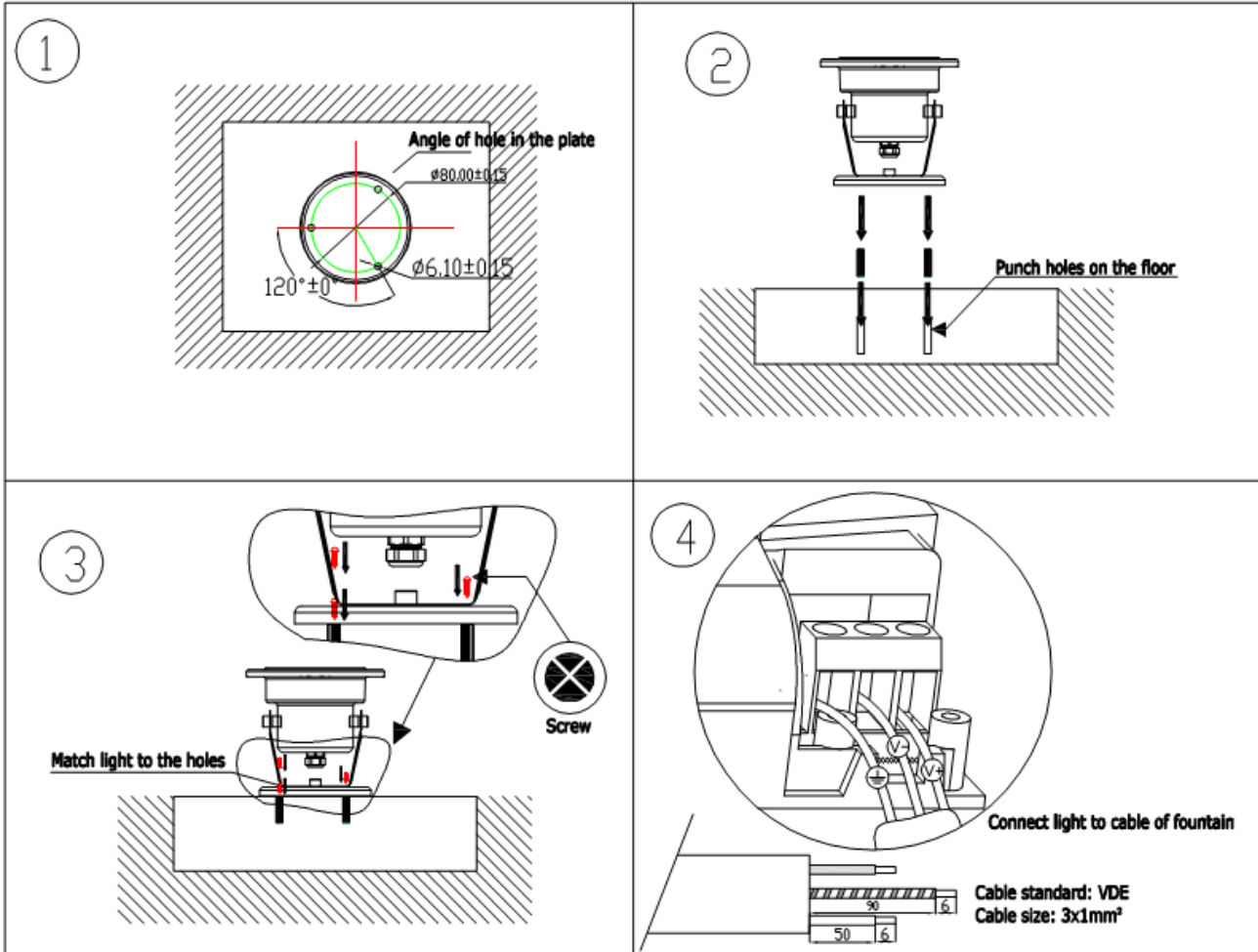
Part No.	Package dimension
GNH-UW-3W-D	1 pc in a white box, 45 pcs in 64.5x45x42cm master carton N.W.: 14.5 kgs
GNH-UW-3W-R	1 pc in a white box, 45 pcs in 64.5x45x42cm master carton N.W.: 15 kgs







**5. Installation Instruction:**



**Caution:**

**Fountain light need to be used in underwater.**

**Fountain light requires toroidal transformer, electronic transformer is not applicable.**



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## **6.Applications:**

The underwater Light and the Pond light are widely used in Fountains, Swimming Pools, Ponds & Gardens.  
Ideal for architectural or event illumination.

