WARNING

This product uses High Brightness LEDs. direct viewing of the 1 Watt LED Modules at close range should be avoided.

Keep product away from children.

Litewave LTD. Will not accept responsibility for any other issues arising from improper use or fitting of this product where such matters are beyond our control.

Having highlighted a number of safety issues and warnings in this installation guide Litewave LTD. will accept NO responsibility for issues arising from any failure to comply with these instructions and recommendations.

Installation

Prior to Installation we advise that you bench test the 1 Watt LED Modules, these are usually tested prior to dispatch. Connect the + wire (usually white) from the Module to the (+) wire of the output of the Power Supply (a fully charged 9v pp3 will also work), connect the remaining - wire (usually grey) to the negative (-) battery terminal.

The wires can be connected to the output of the power supply with the DC Adaptor supplied (5A is the maximum load that should be put on it), alternatively you could use a terminal block, or bullet connectors. Whatever the connection method it should be located in the dry. The Module/s will only light if connected the right way around with the + output of the power supply to the + input of the Modules.

Ensure that all of the LEDs are fully lit – **AVOID VIEWING THE LEDS DIRECTLY**

Decide where you want to place the 1W LED Modules. The Modules can be secured in place with the included double sided adhesive pads or fixed permanently self-tapping screws through the fixing lugs moulded into each side of the Modules.

For screw fitting, use a marker pen to mark through the first mounting lug of the module then mark the second lug. Next take a 2mm drill bit and pre-drill each of the marks before fixing the modules in place with suitable self-tapping screws.

Wiring

The Modules can be linked in a daisy chain or powered individually. If powering individually please make sure when cutting the wire between the modules that you leave enough wire for connecting each module to a power source.

Each 1w Module has two wires going in (positive & negative) and two wires coming out to carry the voltage to the next module. The White wire from the Modules is usually the positive (+) and the grey wire is negative (-).

Connect the wire from the first Modules in the chain to the output of the power supply.

If the wires to the Modules are extended or joined it is advisable to solder the wires of Modules together and seal with adhesive lined heat shrink sleeve, this looks much neater and is not prone to corrosion at a terminal block would be.

As an added safety precaution we also advise using a fuse between the positive wire of the power supply and the connection to the first module, the fuse size will depend on how many Modules being powered. For example each Module draws approx. 120ma so 10 Modules will draw 1.2A, so you should use a fuse near to that size such as a 1.5A Fuse.

If there is no module to follow in line, cut the two wires from the last module short and cover the ends of each wire to insulate them so that there is no possibility of short circuit.

If extending the wire to or between modules use wire that has sufficient amperes for the number of Modules being powered. For example 20 Modules will require wire rated at 3A or more.

The LED Modules are splash resistant, but should not be submerged in water.

Each Module is draws approx 120ma (0.12A) of power, so for a chain of 20 modules the power will be 2.4A. **No more than 20 Modules should be used in a single chain** or brightness may not be consistent and they may be overloaded.

If a power supply having a significantly greater current capacity than the current requirement of the LED product(s) is to be used then a safety fuse will be required along the positive input wire to the product. This is to prevent excess current flowing through the supply wiring and LED product(s) under fault conditions such as accidental damage. Such a fuse must be located as near to the supply or driver to protect the installation wiring and shall have a current rating just higher than the total load anticipated under normal operating conditions.

Note that a fuse may only be omitted from the low voltage side if the power supply provides its own overload protection and is unable to significantly exceed the maximum rating of the wiring and LED product before it trips.

If hard-wiring the input of the Power Supply to the AC mains it is essential to use a fused wall switch or outlet. The fuse on the mains side should be 3A or less. Only a qualified electrician should hard-wire the Mains PSU.

Power Supplies should be installed in a dry location.

If in doubt consult a qualified electrician.

Warranty

This product is warranted from manufacturing defect only. This warranty is valid for 1 year from the date of purchase. This warranty does not apply to damage caused by user installation or normal wear and tear. Litewave Ltd gives no warranty against damage to any surface due to removing or applying this product.

Please follow instructions and warnings carefully.

Specifications

Nominal supply voltage:	12 Volts DC ([1])
Viewing Angle:	120 Degrees
Maximum current drain:	0.120 Amps (120ma) per module
LED Type:	1 Watt Emitter
IP Rating:	IP65

Resources

To see the full Litewave product range visit http://www.litewave.co.uk

Environmental Information

At the end of this product's usable life it should be disposed of according to WEEE regulations, which means it should be taken to your local municipal site for safe disposal/recycling.

Safety Information:

- Keep away from children

- The product itself and all its components should not be mechanically stressed.
- Installation must not damage or destroy conducting paths or other parts of the product
- Installation of LED product (with power supplies) needs to be made with regard to all applicable
- electrical and safety standards. Only qualified personnel should be allowed to perform installations.
- Correct electrical polarity needs to be observed. Wrong polarity may damage or destroy the LED product.
- Parallel connection is highly recommended as safe electrical operation mode.
- Serial connection is not recommended. Unbalanced voltage drop can cause hazardous overload and damage the strip.
- Please ensure that the power supply is of sufficient power to operate the total load.
- Only power the LED product with Switchmode Power Supplies (constant voltage). Do not use a constant current Power Supply.
- If fixing on metallic or otherwise conductive surfaces, there should be an electrical insulator between the product and the mounting surface.
- All LEDs are static sensitive.
- Damaged by corrosion will not be honored as a materials defect claim. It is the user's responsibility to provide suitable protection against corrosive agents such as moisture and condensation and other harmful elements.
-Identify Positive (+) and negative (-) outputs of the Power Supply by using a multimeter.
-Electrical Connections should be in a dry area unless adequately sealed.

LITEWAVE LTD. MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, REGARDING THESE LITEWAVE LTD. MAKES PRODUCTS AVAILABLE SOLELY ON AN "AS-IS" BASIS. IN NO EVENT SHALL LITEWAVE LTD. BE LIABLE TO ANYONE FOR SPECIAL, COLLATERAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING OUT OF PURCHASE OR USE OF LITEWAVE PRODUCTS. THE SOLE AND EXCLUSIVE LIABILITY TO LITEWAVE LTD, REGARDLESS OF THE FORM OF ACTION, SHALL NOT EXCEED THE PURCHASE PRICE OF THE LITEWAVE PRODUCT DESCRIBED HERE IN.