

WARNING

This product uses High Brightness LEDs. direct viewing of the SMD 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 SMD LED Modules, these are usually tested prior to dispatch. Connect the + wire from the Module to the (+) wire of the output of the Power Supply (a fully charged 9v pp3 will also work), connect the remaining white wire to the negative (-) battery terminal.



The wires can be connected to the output of the power supply with the 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, these are usually printed on the Module.

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

Decide where you want to place the 5050 SMD 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

Each Module has two wires going in (positive & negative) and two wires coming out to carry the voltage to the next module.

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.

Connect the wire from the first Modules in the chain to the output of the power supply. There are two wires from the output, identify the positive wire and connect it to the + wire of the Module. **The wires can be connected together by using a terminal block, dry areas only.**

The remaining wire from the power supply is negative and should be connected to the negative "-" wire of the Modules.

If the Modules do not light reverse the wires, LEDs have a polarity and will only work one way around. They should now light.

To join the wires it is advisable to use terminal blocks as this is more secure and safer than using electrical tape. As an added safety precaution we also advise using a 1.5A amp fuse between the positive wire of the power supply and the connection to the first module (up to 20 Modules).

If there is no module to follow in line, simply remove the wires as close to the body of the end module as possible – cover the stubs with a small dab of silicone to insulate them.

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 1.5A or more.

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

Each Module requires approx 60ma of power depending on the colour, so for a chain of 10 modules the power will be 600ma. **No more than 20 Modules should be used in a single chain** or they may be overloaded. For longer runs each set of 20 Modules can be placed end to end but should each be wired back to a suitable Power Supply.

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.

We do not advise using the product in a vehicle, you fit to a vehicle at your own risk. **PLEASE NOTE:** If using in a vehicle or on a vehicle battery **it is essential** to use an in-line fuse along the + input to the LED product, if unsure consult a qualified vehicle electrician.

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
Viewing Angle:	120 Degrees
Maximum current drain:	0.060 Amps (~60ma) per module
LED Type:	5050 SMD
IP Rating:	IP65 (Splashproof)

CE



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.