

## WARNING

This product uses High Brightness LEDs. Direct viewing of the SMD LEDs at close range should be avoided.

Keep product away from children.

Clean the LED Strip with damp a tissue only.

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

Although the product is tested after manufacturing, it is highly advisable to test the Flexible LED Strip before cutting or fixing in place to make sure it has not been damaged in transit, and that it is the correct colour.

To test: Connect the White (+) wire of the LED Strip to the positive wire of a 12 Volt DC Switchmode Power Supply\* (a 9v pp3 will also work for testing), then connect the black wire of the LED Strip to the negative (-) wire of the power supply (or pp3 battery). Ensure that all of the LEDs are fully lit, but **AVOID VIEWING THE LEDS DIRECTLY.**



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 the wires should be located in the dry. The LED Strip will only light if connected the right way around with the + output of the power supply to the + input of the LED Strip.

Next identify the location where the Strip is to be fixed. Do not fix the Strip where it will get exposed to moisture or water. Equally, do not affix the Strip directly to a metal surface as there is a risk of creating a short-circuit on the back of the Strip if accidentally perforated.

Once the location for the Strip has been decided upon simply remove the 3M Adhesive backing strip and carefully lay the Strip in place working from one end to the other ensuring there are no raised sections. Using a lint-free cloth gently press between the LEDs on the Strip to remove any air bubbles and activate the adhesive, however, make sure you do not press directly on the LEDs themselves as this could damage them.

## Wiring

The 2 wires from the LED Strip can be extended if necessary by using any low-voltage 2-Core cable with a current rating of 3 Amps or greater. With long cable runs the use of a cable with a higher current rating will ensure minimal voltage-drop in the wiring which could otherwise affect the brightness. **4M of LED Strip is the maximum recommended length** for a continuous run (spur) **or joined lengths** otherwise brightness may not appear uniform along the entire length and the Strip may be overloaded. If longer runs are required, and the power supply has adequate capacity, additional lengths should be wired back directly to the supply forming separate spurs. The Strip itself is unsuited to carrying more than 3 Amps so do not extend it with excess lengths or other types of current load.

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 anticipated in the spur. Each additional Spur will require its own separate fuse.

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 Strip, if unsure consult a qualified vehicle electrician. Follow the cable ratings on page 3 for the appropriate amperage fuse.

**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.**

## Cutting and connecting the Strip

**It is the user / installers responsibility to make sure the LED Strip is sealed properly against moisture if cut.**

Although we advise against cutting the LED Strip because this will affect your warranty, we have provided a brief guide of how to cut and join the Strip below. **NOTE: When soldering always do so in a well ventilated area and wear a mask.**



Cut the Strip along the line with the 2 solder pads on either side of the cut.



Be careful when soldering that you do not overheat the pads as this heat can damage the pad and the LEDs, a small dab of flux paste helps with a clean and fast solder connection. **Make sure the wire you use is rated for load.**

Apply a small blob of solder to each copper solder pad. Before soldering the wire to the pads it is best to apply a small amount of solder to each of the wires to tin the wires this will prevent the wires from becoming frayed and causing a short-circuit. Then solder the red wire to the positive (+) solder pad, and solder the black wire to the negative (-) pads as shown.

To get around corners you can use the same process to link one length of LED Tape to another.

The soldered joints **should** be insulated to prevent accidental short-circuits, this can be done with heat shrink tube.

## 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. Cutting the Strip will automatically void your warranty, so do so carefully. If a segment becomes faulty only that part can be replaced under warranty once cut. Litewave LTD. gives no warranty against damage to any surface due to applying or removing this product. Please follow instructions and heed all warnings carefully.

## Specifications

Voltage:	12 Volts DC
Viewing Angle:	90 Degrees
Maximum current drain:	Approx. 0.35 Amps (350ma) per Meter
LED Type:	SMD
Light Output:	300 Lumens/m
Durability:	Not Waterproof
Certifications:	CE, RoHS



## Cable and fuse rating:

**(round up if necessary):**

500mm = 250mA

1M = 500mA

2M = 1Amp

4M = 1.5Amp

**Important: Installation by qualified electrician recommended.**

### **IMPORTANT Safety Information:**

- Keep away from children, this is not a toy.
- DO NOT place or fit the LED Strip near sources of heat or naked flames. Do not install on flammable material.
- Not recommended for use outdoors or in extreme temperatures.
- Maximum length of Strip is 4 Meters do not exceed or extend.
- DO NOT curl or twist the LED Strip whilst power is on. The LED Strip can be bent on it's flat side but should not be flexed sideways.
- The LED Strip should be removed from the reel before powering.
- Soldered connections should not cause a short across the tracks. Connections should be sealed with heat shrink or adhesive lined heat shrink.
- Assembly or connections must not damage or destroy conducting paths on the circuit board. The LED Strip itself and all its components should not be mechanically stressed.
- Installation of LED Strip (with power supplies) needs to be made with regard to all applicable electrical and safety standards.
- We advise a qualified electrician perform entire installation.
- Correct electrical polarity needs to be observed. Wrong polarity may destroy the LED Strip.
- 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 LED Strip.
- Please ensure that the power supply is of sufficient power to operate the total load.
- \* Only power the LED Strip with a 12vdc Switchmode Power Supply (constant voltage). Do not use a constant current Power Supply. Do not exceed the load of the Power Supply. The Power Supply should conform to Class 2 and SELV standards.
- Fixing to conductive or metal surfaces is not recommended. If fixing on metallic or otherwise conductive surfaces, there should be an electrical insulator between LED Strip and the mounting surface to prevent possible short-circuit.
- 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 and joints 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.

### **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.