



## INSTALLATION INSTRUCTION

### Spotless Neon Flex LED Strip IP65

#### 3 Year Warranty

Product code	6-Digit code
ILSTWHIB082E	46-69-46
ILSTWHIB083E	56-50-10
ILSTREDB297E	47-93-32
ILSTGREB298E	94-61-42
ILSTBLUB299E	40-11-56
ILSTAB130	10-51-25
ILSTAA300	46-39-24

### **WARNING**

**DO NOT CONNECT THE LED STRIP DIRECTLY TO A MAINS POWER SUPPLY. THE LED STRIP MUST ONLY BE CONNECTED TO A SUITABLE 24V LED DRIVER. SWITCH OFF THE MAINS POWER BEFORE INSTALLING THE LED STRIP**

#### IMPORTANT NOTICE

- A qualified electrician should install this product in accordance with this guide
- All electrical work must be completed in accordance with all applicable regulations and laws in the country in which it is installed. (including IET wiring regulations for the UK)
- Switch OFF the power at the mains before installing or cutting the strip. Do NOT power the strip whilst in its packaging reel.
- The LED strip must only be installed in sheltered areas (indoor or outdoor). The unit is protected against water jets and dust. Not suitable for water immersion.
- When turned ON, avoid staring directly at the LED strip.
- Observe the operating temperature -25° C to +60° C.
- This product is electrical Class III. A Class III appliance is designed to be supplied from a Safety Extra Low Voltage (SELV).
- Observe the correct polarity for 24V connections, Positive (+ RED) and Negative (- BLACK)
- Safely route and secure all wires so they cannot be damaged.
- Do NOT twist or heavily press down on the LED strip.

#### CHOOSING A 24V LED DRIVER

- This product is a 24V DC supply LED strip and requires a 24V DC CV Constant voltage LED driver to be specified for operation. LED drivers are sold separately and are available in various wattages.
- The driver's specification required will depend on the total power requirement of the connected strip(s). The power output of the driver (wattage rating) must be at least 20% higher than the total required wattage of the LED strip(s) being powered.

**For example, this 5M strip is 18W/metre – the total power requirement is 90W (5 X18W). The power rating of the driver should be a least 20% above 90W, a minimum of 108W (90W X 1.20). So a 150W driver will be suitable for 5M.**

- Ensure the LED driver specification and the IP rating is correct for your application

#### IN THE BOX

##### In the box

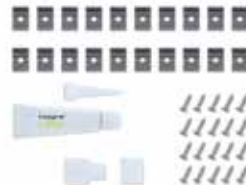
**1 x 5M ±5cm IP65 INTEGRAL Spotless Neon Flex on reel pre-fitted with an appropriate connector at both ends to connect to a suitable power supply.**



##### Accessories for IP65 Spotless Neon Flex LED strip

20 x Metal mounting clips + 20 screws

1 x sealed end cap + 1 end cap with cable entry + 1 tube of silicone (to make a corner using the end of the strip, which is also pre-fitted with a connector wire. A cut length can also be terminated using the sealed end cap. Depending on your installation, you can purchase optional or additional accessories such as an IP65 kit



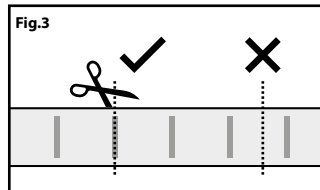
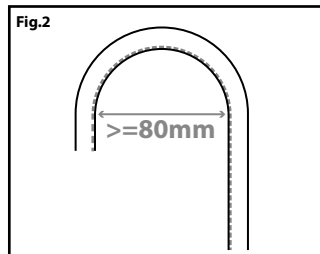
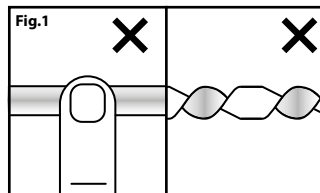
## B) PRE-INSTALLATION GUIDE

Take some time to plan your project. The specification, length, mounting position and distance from an object determines the appearance of a lit LED strip. Consider the placement of the LED driver and wires and how the LED strip will be turned ON and OFF. Calculate the total wattage required.

We recommend that you test the strip position before fitting by temporarily holding the LED strip in place using a suitable masking tape if required. Safely connect the power supply (see instructions). You can then carefully move the strip to try different angles and positions to gain the desired illumination effect. Check for reflections and shadows.

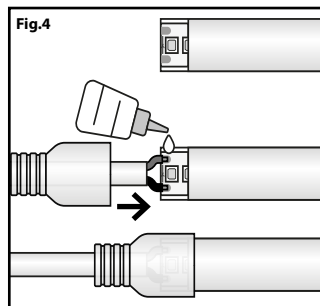
Consider the surface you are applying the LED strip to; the surface should be stable, clean and smooth. On removal of a fixed LED strip - damage to the substrates may occur. Take care in measuring the length required before cutting the strip, take into account the space needed for the connection wires.

- Do NOT press or twist the strip or other components during installation (Fig.1).
- Do NOT power the strip in the reel.
- The LED strip must only be installed in sheltered areas (indoor or outdoor). The unit is protected against water jets and dust. Not suitable for water immersion.
- The Integral LED strip has excellent flexibility but requires the bending diameter to be no smaller than 80 mm (Fig.2).
- The strip is pre-fitted with positive and negative connection wires at both ends.
- Check the supply voltage and wire connections before switching the power ON.



## B) INSTALLATION INSTRUCTIONS

- 1) To ensure a successful installation, please read the complete guide
- 2) Release the LED strip from the package and unroll.
- 3) Measure and cut the LED strip to the required length (only cut at the cut marks with the power OFF). Please see the instructions below to seal the strip -section C.
- 4) For a secure fix, supplied screws or alternative fixings may have to be used based on the mounting substrate.
- 5) Metal mounting clips can be applied to secure the strip at approximately 50 cm intervals. Carefully position and fix the clips, insert one side of the strip into the clip, and gently push the other side to secure. You can also use the optional plastic clips if you prefer (supplied without screws). The supplied screws are designed for use with the metal clips.
- 6) Once the strip is affixed, it is then ready to be wired. Please see section D.



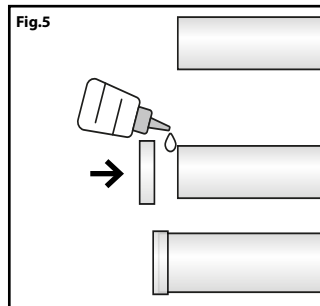
## C) CUTTING THE IP65 STRIP - Switch OFF the power.

If the strip needs to be cut to length, please measure carefully and cut squarely at the appropriate cut marks only using a sharp cutting implement (Fig.3).

The silicone is required to maintain the IP65 rating. Wear protective gloves and eyewear and work on a protected surface (in case of spills) in a well-ventilated area. We recommend that the strip is allowed to dry for 24hrs and to cure for 7 days before subjecting the strip to water. For control, always apply from the nozzle (cut the nozzle 4-5mm from the top).

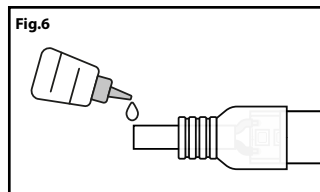
**1) If the strip needs to be cut to length or into two or more lengths, all non-powered ends must be sealed using a silicone sealant and a sealed end cap.**

- a. Cut the strip squarely with a sharp cutting implement - only at the black cut marks on the rear of the strip. - fill the top of the sealed end cap with silicone using the nozzle. Then carefully fill the end of the strip. You can use your gloved finger or a tool to make sure all gaps are filled and a good seal made. Seal the end cap over the strip. Wipe any excess silicon. (Fig.4)



**2) All powered ends have to be sealed using a silicone sealant and a wired sealed end cap**

- a. Cut the strip squarely with a sharp cutting implement - only at the black cut marks. For an end to be powered, carefully remove just enough of the diffuser on the strip above the contacts to solder on wires. Clean the contacts with emery paper and then solder on the power wires - Please pay attention to the polarity.
- b. Once the wires have been soldered, carefully and safely apply power to the strip to



check the connections. Switch OFF the power. Fill the top of the strip with silicone from the tube using the nozzle. Apply the end cap with cable entry to cover the soldering part. Ensure the gaps around the strip, and the protruding wires are sealed using a gloved finger or a tool. (Fig.5).

- c. On the unused connector, cut the wire and add the silicone sealant (Fig.6) or cut and add the end-cap (Section C).

#### D) POWER SUPPLY CONFIGURATIONS AND WIRING

A suitable 24V LED driver powers the LED strip. Ensure the power is OFF and that the correct polarity is observed when wiring the LED driver. (Fig.7)

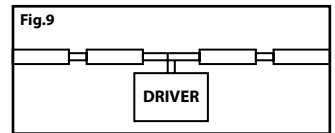
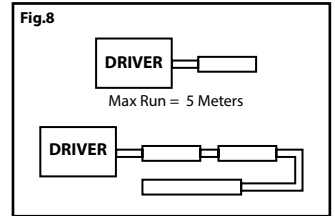
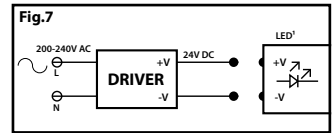
##### Typical installation configuration

<b>STRAIGHT RUN (Series)</b> An LED driver powers the first LED strip. LED strips can be connected in series. A voltage drop may need to be considered	Fig.8
<b>POWERED FROM THE CENTRE (Parallel)</b> Power similar lengths of LED strips from the centre; this configuration will give the best results	Fig.9
Additional accessories (sold separately) may be required for complex configurations.	

**VOLTAGE DROP** - If the total length of LED strips and wiring powered by a single LED driver is too long, you may find that the LEDs furthest away from the driver will be unlit or dimmed. To avoid this, you will need to use additional drivers. For instance, if you are powering 2 x 5M strips from one driver – you will need to split the run into separate 5M runs, each powered by its driver. We advise all strip connections should be soldered.

**⚠ CAUTION:** When applying connection wires to the strip, ensure that the correct polarity is observed. Always observe polarity for 24V connections, positive (+) to positive and negative (-) to negative.

**Check the wire connections before switching the power ON.**



## G) TROUBLESHOOTING

 Always switch OFF power before adjusting the wiring or strip.

Symptoms	Possible Causes	Solutions
<b>None of the LEDs light up</b>	1. No power to the driver.	Please check to see if there is power being delivered to the drivers power supply via the connection to AC power.
	2. The power supply driver connection is wired incorrectly.	Check the polarity for 24V connections, positive (+) to positive and negative (-) to negative. See power supply driver wiring diagram (Section C1).
	3. There is no output voltage from the power supply driver.	Check the power supply driver; it may need to be replaced.
	4. The strip wires are not connected properly to the strip or to the driver.	Check the connectors and polarity. Make sure strip is cut correctly and strip terminals are making a connection within the connector.
	5. Overvoltage may have damaged the LEDs.	The working voltage should be within 5% of the rated voltage (24V). If overvoltage has damaged the product then this is not covered by the warranty.
<b>Some of the LEDs do not work</b>	1. LEDs on the strip are powered in series. If some LEDs in the centre of the strip do not light and LEDs towards the end of the strip do light then the LEDs have failed.	Strip may need to be replaced.
	2. If the LEDs in the beginning of the strip work but none are working after the first non-working LED then there is a connection issue. This could be caused by a poor connection or if the connector is not fitted to the strip correctly. This could also be a result of the strip being bent more than the recommended bending diameter.	Please check the strip connection from the section of the strip that is not lit. Check soldering connections. Check connector joins. Strip may need to be replaced.
<b>The strip when lit is dim or not evenly lit</b>	1. The power load (total Wattage of all strips connected) exceeds the rated Wattage of the power supply driver (total output).	The power supply needed will depend on the total length of strips in use. The power supply driver will need to have an output that is at least 20% more than the total wattage needed to power the strip. See section A.
	2. The length of wire between the strip and power supply or the length of the wire in between each strip is too long.	<ol style="list-style-type: none"> <li>1. Use shorter strip supply wires.</li> <li>2. Use thicker supply wires.</li> <li>3. Make sure that the input voltage of each LED strip is within 90% of the rated voltage.</li> </ol>
	3. Too many LED strips are connected to the power supply driver.	2. Make sure that the total wattage of all LED strips is within 80% of the total output of the power supply driver. If the total wattage of all strips exceeds the driver output then please use a higher wattage driver.
<b>All LEDs are flashing intermittently</b>	There is an intermittent connection at the power supply driver.	Please check driver to AC connection and driver to strip connection.
<b>Some of the LEDs are flashing intermittently</b>	There is an intermittent connection at each strip branch connection.	Please check all strip connections and check connector joins.
<b>LEDs blink once when power is switch on</b>	Please check that the driver is compatible.	This is a 24V constant voltage LED strip. You will need to power the strip using a 24V constant voltage LED driver.



All Trademarks Acknowledged