

LUMUL

LEDneon·flex

INSTALLATION INSTRUCTIONS

YOU MAY NEED



End cap



Power adaptor



Connector pin



Splicing pin



Connector



Silicone glue



Pliers



Power converter



Converter + surge protector



Heat shrink



Aluminium channel



Heat gun



NT cutter

IMPORTANT NOTES

Neon flex contains sensitive electrical components. It must be handled carefully and according to our guidelines otherwise you risk damaging the internal components and voiding your warranty.

1. Ensure the product is installed by a qualified electrician.
2. Ensure you install a stable 220V double conversion / online UPS with your 220V Neon Flex installation.
3. Ensure all wiring is in accordance with national and local electrical regulations.
4. Ensure you cut exactly on the cutting line to avoid damaging the Neon Flex and voiding your warranty.
5. Ensure you seal the Neon Flex ends appropriately for outdoor or wet installations.
6. Ensure you connect positive and negative wires and terminals appropriately to avoid damaging the Neon Flex
7. Never place the Neon Flex onto rough surfaces as the PVC jacket may scratch.
8. Never bend the Neon Flex beyond the stipulated minimum bending diameter.
9. Never bend the Neon Flex vertically, only horizontally (left to right).
10. Never operate the Neon Flex in temperatures exceeding 35°.
11. Never power the Neon Flex whilst tightly coiled.
12. Never power the 220V Neon Flex without an end cap fitted (risk of shock).
13. Never short circuit the 220V power converter / rectifier as it will be permanently damaged.
14. Never puncture, pierce, strike, twist or subject the Neon Flex to continuous flexing.
15. Never power the Neon Flex for longer than 8-12 hours / day as this will quickly reduce the brightness.
16. Never allow a length of Neon Flex longer than 5m to hang freely during installation: it might twist and damage the internal components and the weight may break the internal wiring or flexible strip.
17. Never install vertical lengths longer than 10m: the weight of the Neon Flex might result in an internal break if not perfectly secured.
18. Never exceed the recommended maximum running lengths of LUMUL Neon Flex:
220 Neon Flex : 50m powered from one end
12V Neon Flex : 8m powered from one end and 15m powered from both ends



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NOTE: 220V Neon Flex operates internally at 220VDC which presents a shock hazard if not handled or installed correctly.

PLANNING

1. Using a pencil or chalk, mark where the Neon Flex is to be installed. If being curved, mark the curves as precisely as possible.
2. Plan the cabling of the Neon Flex, noting from which end a length of Neon Flex will be powered, where the wiring will be run, where the power supply will be mounted.

CUTTING THE NEON FLEX

1. Neon Flex can be safely cut on every cutting mark. 220V Neon Flex contains a printed LUMUL dotted line cutting mark every 1m whereas 12V Neon Flex contains a LUMUL printed dotted line cutting mark every 50cm and a black dot every 5-6cm on the underside of the Neon Flex.
2. Measure the desired length of Neon Flex you require and make a mark on the Neon Flex.
3. We recommend cutting the Neon Flex from the top to the bottom.
4. **Ensure you cut exactly on the cutting line or you will damage the product and void your warranty.**
5. Carefully cut the Neon Flex on your cutting mark, using an NT cutter or other very sharp knife.
6. Clean up any exposed copper wires and PCB so that the edge of the cut is square and neat to avoid short circuiting the pins later.

NOTE: Silicone glue sealing is only needed for outdoor / wet installations.

CONNECTING A POWER CONNECTOR (12V power cable or 220V power converter)

1. The power connectors only connect from the right hand end of the Neon Flex. Plan for this before commencing with your installation.
2. Before installing power cables to Neon Flex, pre-join all cables to the power cable leads. Use heat shrink or IP68 connectors and where necessary seal with silicone glue to ensure a waterproof seal.
3. Apply silicone glue to one end of connector pins. Insert the connector pin fully into the two holes on the Neon Flex end, using flat-nosed pliers if needed.
4. Pull a heat shrink sleeve over the Neon Flex, moving it away from your work area.
5. Apply silicone glue around the end of the Neon Flex ensuring no areas are overlooked.
6. Using the heat gun, warm the cap of the power cable until it is malleable.
7. Apply silicone glue to the inside of the power cable cap. Slide the power cable cap over the end of the Neon Flex ensuring the connector pins are aligned, and that the pins insert fully into both the power cable and the Neon Flex.
8. Apply silicone sealant around the power cable cap and slide the heat shrink sleeve over the power cable cap.
9. Using the heat gun, heat the heat shrink evenly until it has shrunk evenly around the power cable cap. **Be careful to not over-heat the sleeve.**
10. Apply silicone glue around both ends of the heat shrink sleeve. Allow the silicone glue to cure.

CONNECTING AN END CAP

1. Pull a heat shrink sleeve over the Neon Flex, moving it away from your work area.
2. Apply silicone glue around the end of the Neon Flex ensuring no areas are overlooked.
3. Using the heat gun, warm the end cap until it is malleable.
4. Apply silicone glue to the inside of the end cap. Slide the end cap over the end of the Neon Flex ensuring it is pushed as far as possible.
5. Apply silicone sealant around the end cap and slide the heat shrink sleeve over the end cap.
6. Using the heat gun, heat the heat shrink evenly until it has shrunk evenly around the end cap. **Be careful to not over-heat the sleeve.**
7. Apply silicone glue around both ends of the heat shrink sleeve. Allow the silicone glue to cure.

220V Neon Flex is designed to operate at voltages between 215VAC and 225VAC. Exceeding this voltage range risks damaging the internal circuitry and LED chips. An online UPS will help protect your neon Flex investment by ensuring a constant, stable voltage of 220V. Your warranty does not cover electrical surges or excessive voltage.



INSTALLATION INSTRUCTIONS

SPLICING TWO SECTIONS OF NEON FLEX

This mode of joining Neon Flex delivers a smooth, unbroken light effect however it is not as strong and secure as connections made with an I, T or L connector and should be used in conjunction with mounting channels.

1. Ensure the ends of both pieces of Neon Flex have been cut square.
2. Clean up the cut edge and remove debris.
3. Pull a heat shrink sleeve over the Neon Flex, moving it away from your work area.
4. Apply silicone glue to one end of the splicing pin, and insert the pin fully into the two holes on the one piece of Neon Flex end, using flat-nosed pliers if needed.
5. Apply silicone glue to the other end of the splicing pin and to the entire joining side of the Neon Flex.
6. Insert the connector pin into the other end of the Neon Flex to be joined.
7. Smear excess silicone glue around the join area.
8. Using the heat gun, heat the heat shrink sleeve until it has shrunk evenly around the power cable cap. **Be careful to not over-heat the sleeve.**
9. Apply silicone glue around both ends of the heat shrink sleeve. Allow the silicone glue to cure.

JOINING NEON FLEX WITH I, T OR L CONNECTOR

The visible light will be slightly dimmer inside the connector.

1. Pull a heat shrink sleeve over the Neon Flex and move it away from the work area.
2. Apply silicone glue to one end of connector pins. Insert the connector pin fully into the two holes on the Neon Flex end, using flat-nosed pliers if needed.
3. Apply silicone glue evenly to the inside of the I, T or L connector and ensure coverage on all walls.
4. Insert the Neon Flex into the connector, ensuring the connector pin inserts fully into the holes in the connector.
5. Smear excess silicone glue around the join area.
6. Pull the heat shrink sleeve over the join.
7. Using the heat gun, heat the heat shrink evenly until it has shrunk evenly around the power cable cap. **Be careful to not over-heat the sleeve.**
8. Apply silicone glue around both ends of the heat shrink sleeve. Allow the silicone glue to cure.

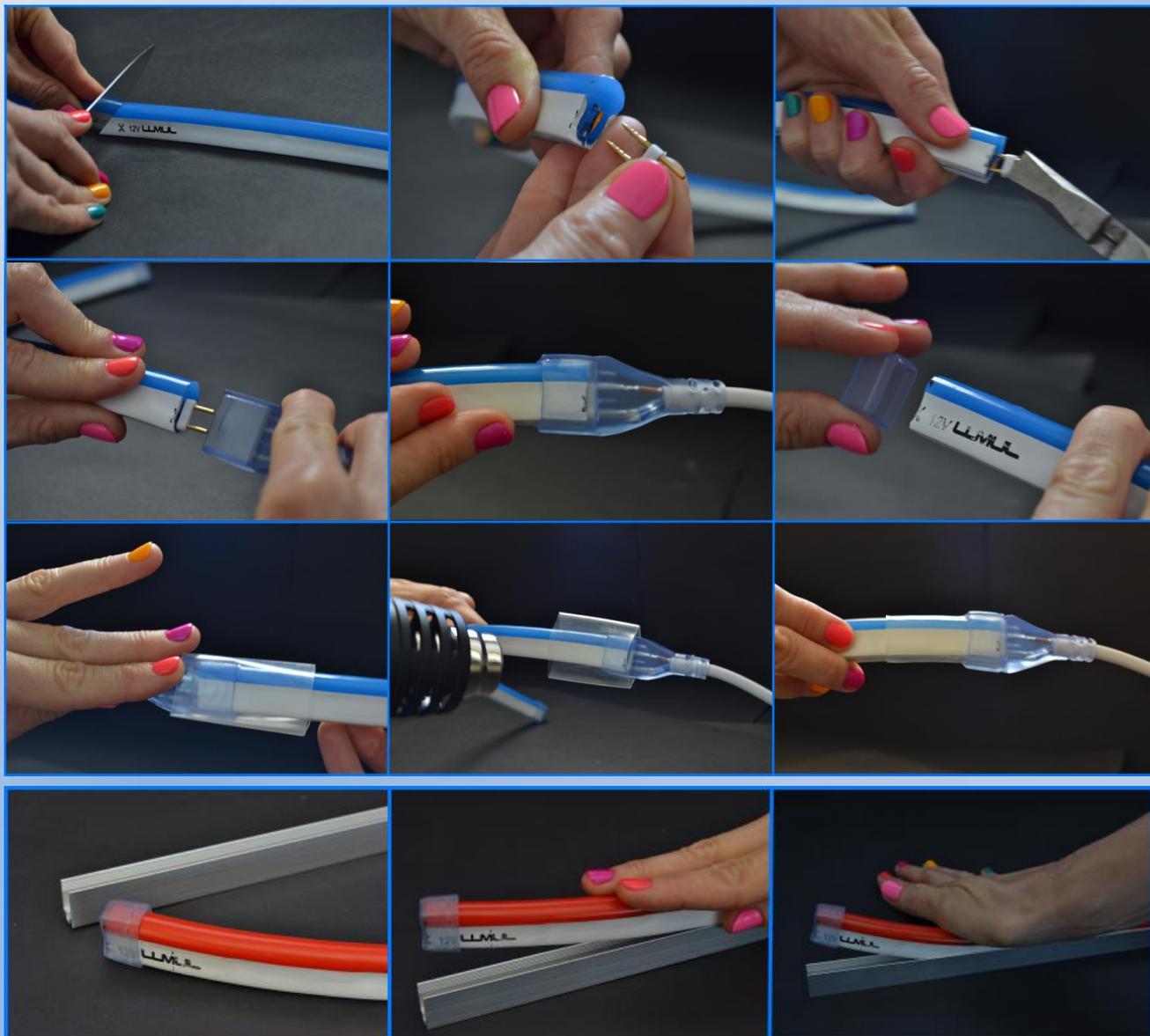
MOUNTING NEON FLEX

1. If installing your Neon Flex in the 1m aluminium channels, ensure you plan correctly in advance. Removing Neon Flex from the channels risks damaging the Neon Flex internal circuitry due to bending the Neon Flex on the vertical axis. Should you need to remove Neon Flex from a 1m aluminium channel be aware of the risk of damage involved which will not be covered by your warranty. To remove Neon Flex from a 1m aluminium channel, hold the Neon Flex as close to the channel as possible and pull slowly vertically, keeping the Neon Flex as taught as possible.
2. If installing long lengths of Neon Flex be cautious not to twist the Neon Flex. You must unroll the Neon Flex by turning the reel to avoid twisting it, preferably unrolling the Neon Flex from the reel as you insert it into the channels. Unrolling an entire reel before installing it is not advised as it risks twisting the Neon Flex or bending it on the wrong axis.
3. Neon Flex is ideally mounted using the 5cm or 1m aluminium mounting bracket.
4. Mounting brackets will hold the Neon Flex in place through bends or over straight lines.
5. Each portion of a curve will require a mounting bracket.
6. For precise bends consider cutting smaller mounting bracket lengths using a hacksaw.
7. Place the Neon Flex into the mounting brackets and test the layout, making adjustments as required. Remove the Neon Flex.
8. If necessary, drill holes for the mounting bracket, using plastic wall plugs where necessary.
9. Screw the mounting bracket to the mounting surface ensuring it is securely mounted.
10. Apply a small amount of silicone glue to the inside of each mounting bracket to help ensure that once mounted, the Neon Flex does not easily move.
11. If mounting the Neon Flex vertically use long LUMUL aluminium mounting channels, use liberal quantities of silicon glue and secure with regular tight cable ties around the Neon Flex and channel to prevent the Neon Flex slipping down or falling out of the channel due to gravity. If the vertical length of Neon Flex is over 5m and not secured properly it is likely to pull downwards and break the internal wiring and flexible strip.
12. Place the Neon Flex into the mounting brackets and press down firmly to ensure the Neon Flex is properly secured.

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LUMUL Neon Flex has been designed for usage not exceeding 8-12 hours per day. Extended usage will increase the risk of premature reduced brightness due to excessive heat build-up within the neon jacket.

We recommend installing a timer device (example a day-night switch) to installations to maintain usage within the recommended guidelines.



INSTALLATION INSTRUCTIONS

POWER SUPPLY SELECTION FOR 12V NEON FLEX

1. LUMUL 12V Neon Flex requires a constant voltage power supply.
2. Always ensure the power supply is sized correctly or you risk damaging the power supply.
3. Size the power supply 20% larger than required so as never to overload or overwork the power supply.
4. Neon Flex is polarity sensitive. Ensure the positive and negative wires on the Neon Flex are properly connected to the positive and negative terminals of the power supply.
5. Each meter of LUMUL 12V Neon Flex is rated at 14W at 14V and tested at 7W at 12V.
6. Never exceed the maximum running lengths of 8m powered from one end and 15m powered from both ends.
7. Power can be supplied to each end of LUMUL 12V Neon Flex to enable longer lengths of Neon Flex to be run.
8. When powering from both ends ensure sufficient power is available at each end to supply enough voltage to the middle of the length of Neon Flex otherwise you will experience voltage drop and possibly overload one of the power supplies.
9. DO NOT install power supplies in parallel unless they are specifically designed for this.
10. To calculate the minimum wattage of power supply required: **Wattage = (Neon flex meters) * 18**

Length of Neon (m)	Power Connection	Minimum Driver	IP20 LRS Meanwell Drivers	IP67 HLG Meanwell Drivers	IP67 ELG Meanwell Drivers
1m	1 end	18W	LRS-35-12	HLG-40H-12	ELG-75-12
2m	1 end	36W	LRS-35-12	HLG-40H-12	ELG-75-12
3m	1 end	54W	LRS-50-12	HLG-60H-12	ELG-75-12
4m	1 end	72W	LRS-75-12	HLG-80H-12	ELG-150-12
5m	1 end	90W	LRS-100-12	HLG-100H-12	ELG-150-12
6m	1 end	108W	LRS-150-12	HLG-120H-12	ELG-150-12
7m	1 end	126W	LRS-150-12	HLG-150H-12	ELG-150-12
8m	1 end	144W	LRS-150-12	HLG-150H-12	ELG-150-12
9m	2 ends	162W	2 x LRS-100-12	2 x HLG-100H-12	2 x ELG-150-12
10m	2 ends	180W	2 x LRS-100-12	2 x HLG-100H-12	2 x ELG-150-12
11m	2 ends	198W	2 x LRS-100-12	2 x HLG-100H-12	2 x ELG-150-12
12m	2 ends	216W	2 x LRS-150-12	2 x HLG-120H-12	2 x ELG-150-12
13m	2 ends	234W	2 x LRS-150-12	2 x HLG-120H-12	2 x ELG-150-12
14m	2 ends	252W	2 x LRS-150-12	2 x HLG-150H-12	2 x ELG-150-12
15m	2 ends	270W	2 x LRS-150-12	2 x HLG-150H-12	2 x ELG-150-12



VOIDING YOUR WARRANTY

Please take note that the following actions will void your warranty:

- Running your Neon Flex for longer than 12 hours a day
- Running your Neon Flex outdoors during the day in hot weather
- Running your Neon in temperatures exceeding 45°C or below -5°
- Cutting your Neon Flex other than on the cutting marks
- Not sealing your Neon Flex with silicone glue and the supplied heat shrink when being used outdoors or in wet environments
- Submerging your Neon Flex in water deeper than 1m (even when sealed with silicone glue and heat shrink sleeve)
- Twisting your Neon Flex
- Bending your Neon Flex on the vertical axis
- Exceeding the maximum lengths recommended
- Incorrectly wiring the Neon Flex
- Not running a double conversion / online UPS with 220V Neon Flex
- Piercing the Neon Flex
- Shorting the 220V converter / rectifier
- Soldering directly onto the Neon Flex FPC
- Freely hanging a length of Neon Flex longer than 5m when installing
- Not properly securing your Neon Flex with silicone glue and cable ties in vertical installations exceeding 5m
- Incorrectly wiring your Neon Flex
- Exceeding the stated input voltage for the Neon Flex
- Under-powering your Neon Flex
- Attempting to dim the Neon Flex by reducing the input voltage
- Exceeding the minimum bend radius on the horizontal axis
- Physically striking the Neon Flex causing damage to the sensitive internals
- Using a faulty power supply or dimming controller