

LED strip manual

liniLED® Side High Power



liniLED®

LED strip Side High Power

General	4
Handling	4
Installation	4
Operation and use	4
Cleaning and maintenance	4
Environment and waste	4
Warning	5
Product information	5
Product specifications	5
Product dimensions	4
Cable selection	6
Area advice	7
Product care and handling	8
Cutting instructions	9/10
Soldering	11/12
Connect IP40	13/14
Uninstalling the connector	15
Power supply	16
Symbols	17

General

Read the instructions and safety precautions before installation, usage and storage of the products to secure safety of the user and reliability of the product.

- Hand over the instructions to the end-user and those responsible for installation and usage.
- Triolight BV cannot be held responsible for improper handling, product installation, usage or storage.

Handling

- Handle with care.
- The product may not be modified or converted otherwise than prescribed.
- Products are transported in proper packaging. Products should remain packed until installation.
- Take ESD (Electrostatic Discharge) protection measures when handling liniLED® products.
- The products and their components may not be exposed to mechanical, static loads and other tension/compression other than from the product itself.

Installation

- Attention: The power has to be switched off the main power supply or the connection before installation. Not doing so may damage the product.
- Installation has to be done by a professional with knowledge of electrical circuits or a specialised maintenance person known with valid directives.
- General and local construction-, safety- and installation regulations should be respected.
- Use only supplied parts, accessories and required tools as prescribed in the installation manual to guarantee a safe installation and use of the product.
- Products may solely be installed in the areas according to their prescribed IP-rating, IK-rating, temperature range and chemical resistances.
- Do not install the product in the following cases:
 - Damage is visible on the product or its cables
 - The inside of the product is moistened or dirty
 - The product or its cables have been modified. It could lead to an electrical shock or a short circuit may occur.

Operation and use

Solely use the product when its working correctly. If not, switch the power off immediately and advise an electrical specialist in the following cases:

- Damage is visible on the product
- The product does not function
- Smoke or steam rises from the product
- Crackling sounds are noticeable
- The product is overheating
- Repairs on the installation may only be performed by qualified electricians.
- Product repairs may solely be done by Triolight BV.
- Use a suitable LED power supply / driver: 24 V DC constant voltage.
- Do not drive the product on other voltages than described in their datasheet/products specifications.
- Do not fasten anything on the product, same applies for hanging.
- Children may not play unsupervised with electrical products as they cannot judge the dangers in dealing with electrical circuits correctly.

Cleaning and maintenance

- **Attention:** Disconnect the power before maintenance and cleaning.
- Dust and dirt accumulated over time should be removed from the light-emitting surface to assure optimal functioning of the product.
- Paints, solvents and corrosive cleaning chemicals may not contact and thus affect the product.

Environment and waste

- Exterior decorative lighting should only be used after sunset.
- This product may not be treated as household waste. Dispose of the material through the waste recycling of electrical and electronic equipment.

Warning

This product comes with a 2 year warranty.

Warranty void if:

1. The installation guide has not been consulted (installation mistake).
2. The installation is not done by a certified installer.
3. Local rules and guidelines are not respected.
4. The invoice cannot be shown and/or has been altered.
5. Damage is caused by negligence, abnormal use or improper handling, use, maintenance and/or cleaning of the product.

This product is intended for professional use only! This product must be installed by a qualified and certified installer according to local rules and guidelines. Triolight BV cannot be held liable for (consequential) damage and/or injuries due to unintended use and/or installation errors.

Product information

The liniLED® Side High Power (HP) LED strip (IP40/IP68*) is a high quality, flexible LED strip, with a unique co-extrusion technology. The built-in reflection guarantees an optimal light effect from the side. Therefore the liniLED® Side HP LED strip is ideal for indoor and outdoor usage in round shaped coves, around pillars, etc.

* Connect the Side LED strips with the liniLED® Side Connector Sets (1 m 11202 or 5 m 11203). Use the liniLED® Side Extension Cord (11209) to extend. Combine with the liniLED® Cast Joint (11533) for waterproof (IP68) usage.

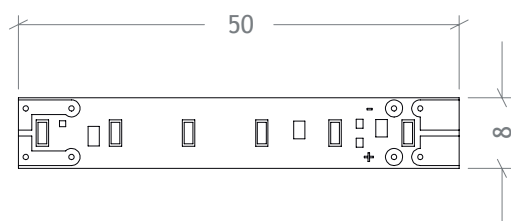
Product specifications

Colour	LED/m	V DC	W/m	lm/m	Temp °C	Max. Length	B50/L70
2400K	35	24	8.9	499	-30...55 ¹	10 m	> 50.000 h
2700K	35	24	8.9	546	-30...55 ¹	10 m	> 50.000 h
3000K	35	24	8.3	505	-30...55 ¹	10 m	> 50.000 h
4000K	35	24	8.6	557	-30...55 ¹	10 m	> 50.000 h
6500K	35	24	8.6	559	-30...55 ¹	10 m	> 50.000 h

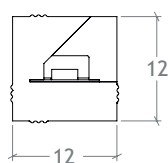
¹Max. connection length between -20 °C and -30 °C is 7 metres.

Product dimensions

LED strip top view



LED strip front view



Cable selection

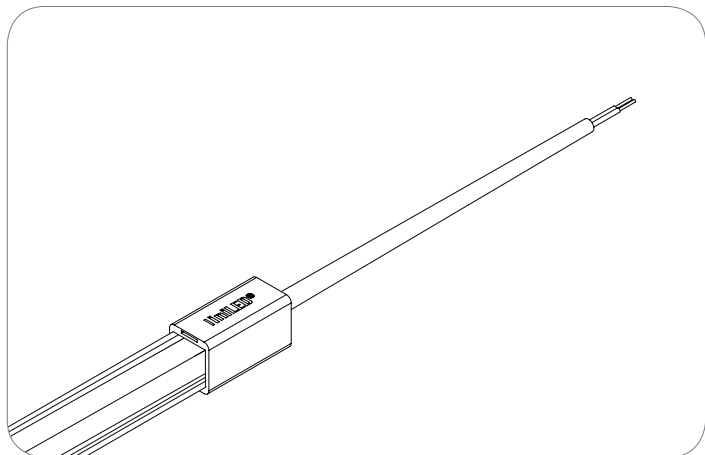
The liniLED® LED strips need a minimum voltage at the beginning of the LED strip to function according to the specifications. The table below gives an indication of the maximum cable length based on the cable thickness and power supply voltage. The connection between the cable and LED strip is with a liniLED® Connector.

In case the required length is larger than the length mentioned in this table, the supply voltage is different or if a detailed wire plan with branches is planned, please contact your distributor for a detailed cable calculation.

Cable X information	LED strip	Max. cable length 2400, 2700K		Max. cable length 3000K		Max. cable length 4000, 6500K	
		@ 24 V DC	@ 25V DC	@ 24 V DC	@ 25V DC	@ 24 V DC	@ 25V DC
liniLED® cable (2 x 0.50 mm ²) 0.035 Ω/m	1 m	33.53 m	65.57 m	36.05 m	70.40 m	34.75 m	67.90 m
	2 m	16.12 m	32.14 m	17.38 m	34.56 m	16.73 m	33.31 m
	5 m	5.68 m	12.08 m	6.18 m	13.05 m	5.92 m	12.55 m
	10 m	2.19 m	5.40 m	2.44 m	5.88 m	2.31 m	5.63 m
Cable (2 x 0.75 mm ²) 0.023 Ω/m	1 m	50.45 m	98.64 m	54.23 m	105.91 m	52.27 m	102.15 m
	2 m	24.25 m	48.35 m	26.15 m	51.99 m	25.17 m	50.10 m
	5 m	8.54 m	18.18 m	9.30 m	19.63 m	8.91 m	18.88 m
	10 m	3.30 m	8.12 m	3.68 m	8.85 m	3.48 m	8.47 m
Cable (2 x 1.00 mm ²) 0.018 Ω/m	1 m	67.07 m	131.14 m	72.11 m	140.81 m	69.50 m	135.81 m
	2 m	32.25 m	64.29 m	34.77 m	69.12 m	33.46 m	66.62 m
	5 m	11.36 m	24.17 m	12.36 m	26.10 m	11.84 m	25.10 m
	10 m	4.39 m	10.80 m	4.89 m	11.77 m	4.63 m	11.26 m
Cable (2 x 1.50 mm ²) 0.012 Ω/m	1 m	100.90 m	197.28 m	108.47 m	211.82 m	104.55 m	204.30 m
	2 m	48.51 m	96.71 m	52.30 m	103.98 m	50.34 m	100.21 m
	5 m	17.08 m	36.36 m	18.60 m	39.27 m	17.82 m	37.76 m
	10 m	6.61 m	16.25 m	7.37 m	17.70 m	6.97 m	16.95 m
Cable (2 x 2.50 mm ²) 0.007 Ω/m	1 m	167.92 m	328.33 m	180.53 m	352.53 m	174.01 m	340.01 m
	2 m	80.74 m	160.95 m	87.05 m	173.05 m	83.79 m	166.79 m
	5 m	28.44 m	60.52 m	30.96 m	65.36 m	29.65 m	62.85 m
	10 m	11.00 m	27.04 m	12.26 m	29.46 m	11.61 m	28.21 m

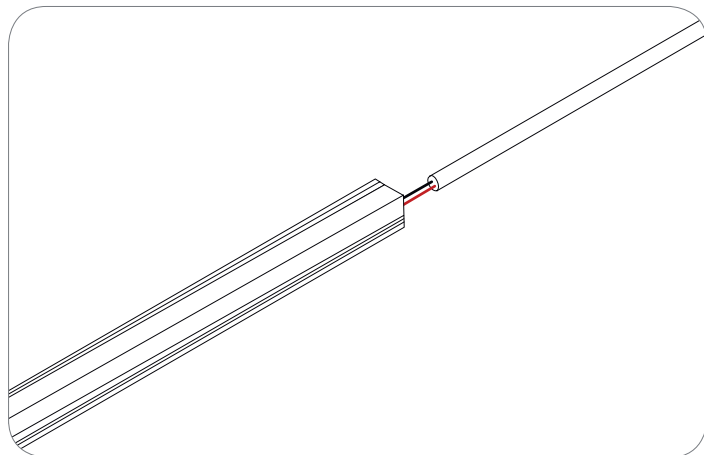
Area advice

Depending on the area where the liniLED® LED strip is installed we offer a range of solutions to cope with external factors. The product portfolio includes a range of IP40 and IP68 connectors. Below the different connectors are displayed for use in different environments.



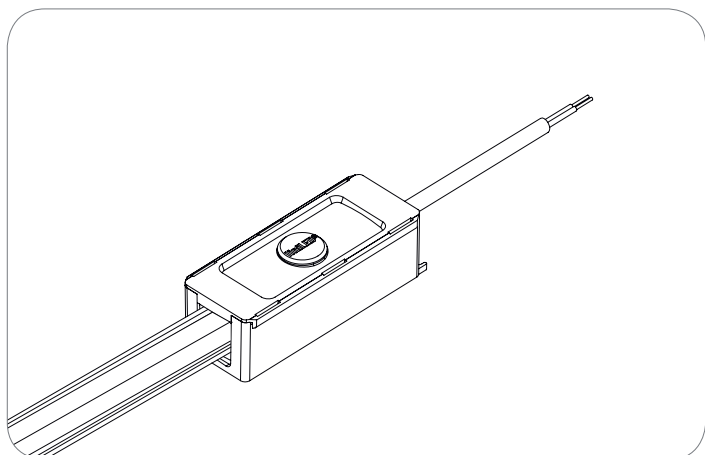
Indoor environment (IP40) | liniLED® Top Connector set

Product code: 11202 (1m), 11203 (5m)



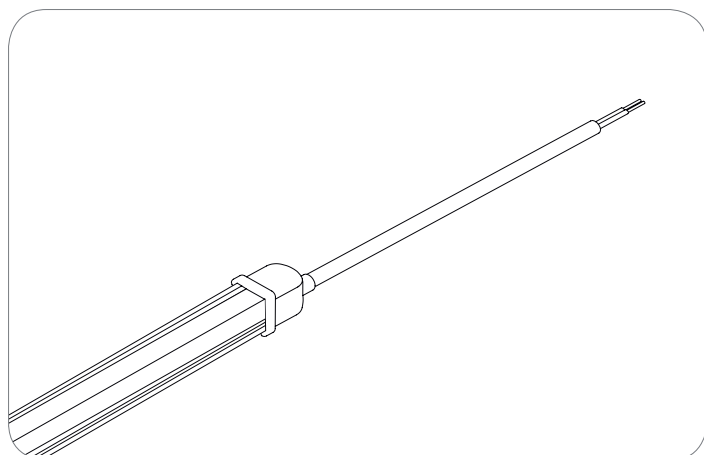
Indoor environment (IP20)

Solder



Wet environment (IP68) | liniLED® Cast Joint IP68

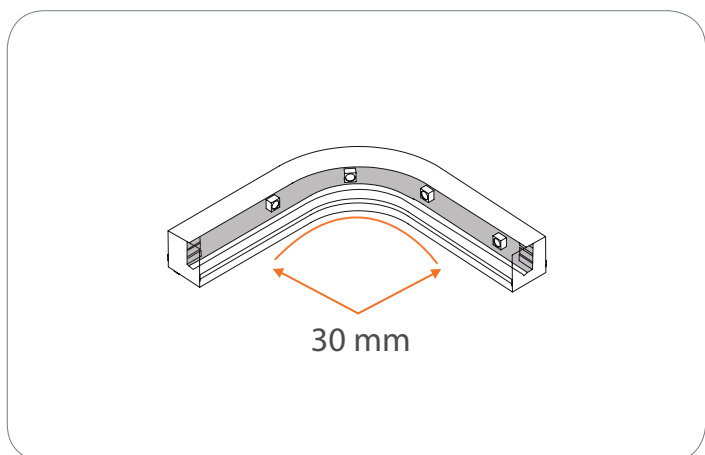
Product code: 11533



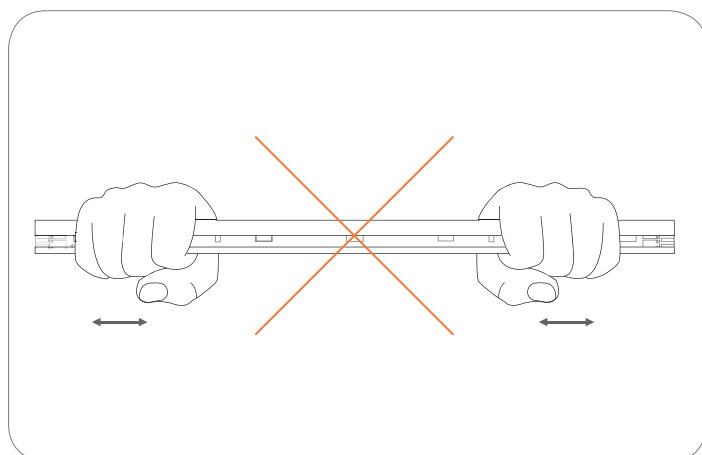
Submersible, chlorine resistant (IP68) | Mirror Welded Connector

Product code: 11291

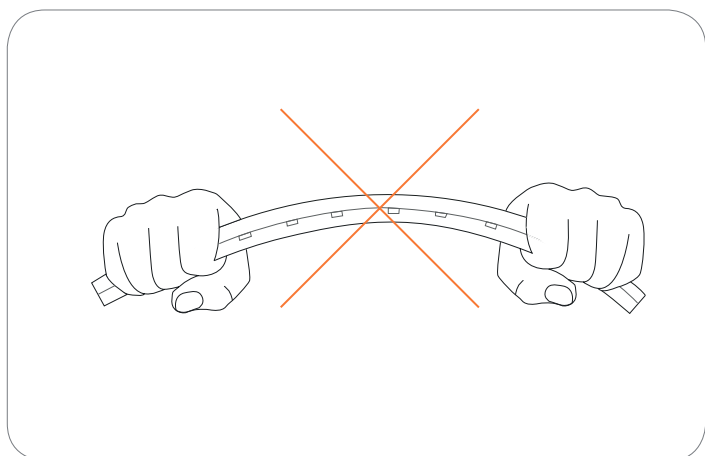
Product care and handling



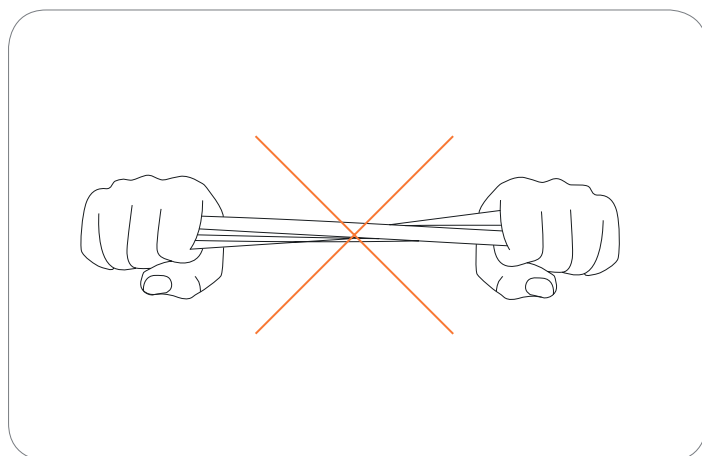
Maximum bending radius is 30 mm. Solely bend up or downward.



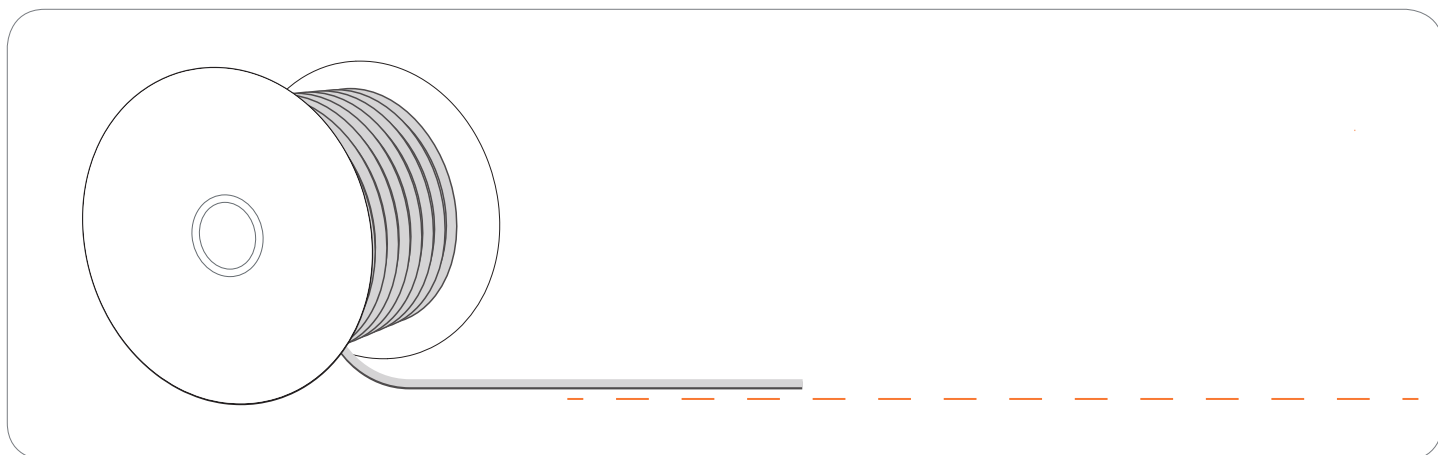
⚠ Do not compress or stretch the LED strip.



⚠ Do not bend the LED strip sideways.

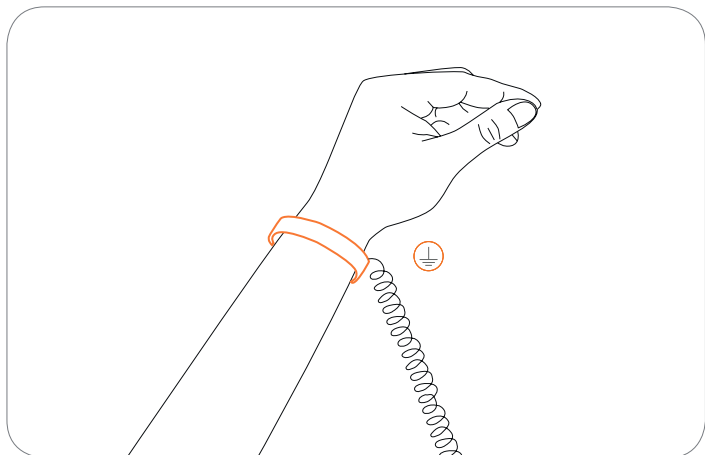


⚠ Do not twist the LED strip.

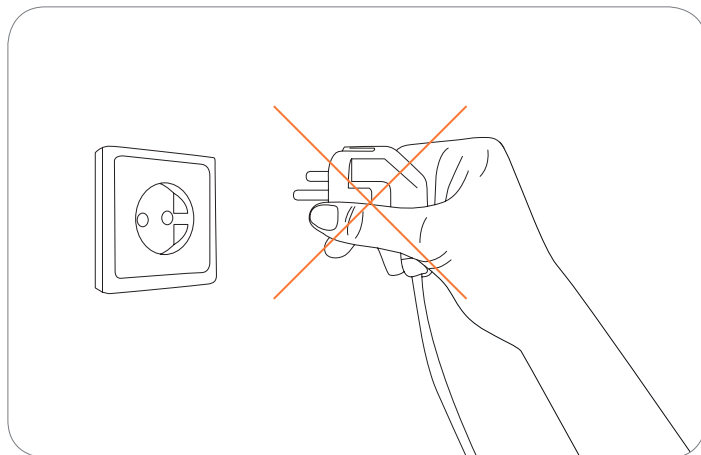


The LED strip has to be unreeled on a horizontal surface at the time of installation. Do not unreele the spool of LED strip before installation.

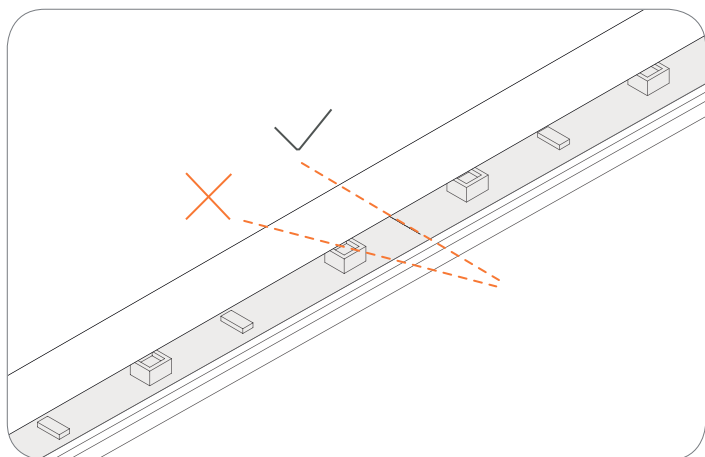
Cutting instructions



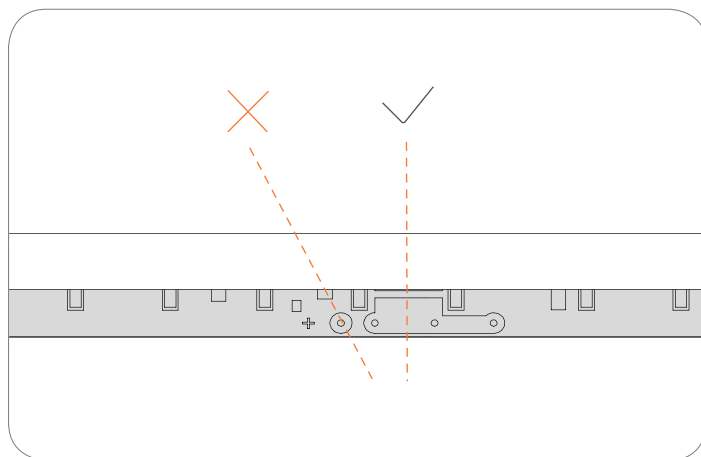
Work in an ESD protected environment. Make use of an anti-static strap.



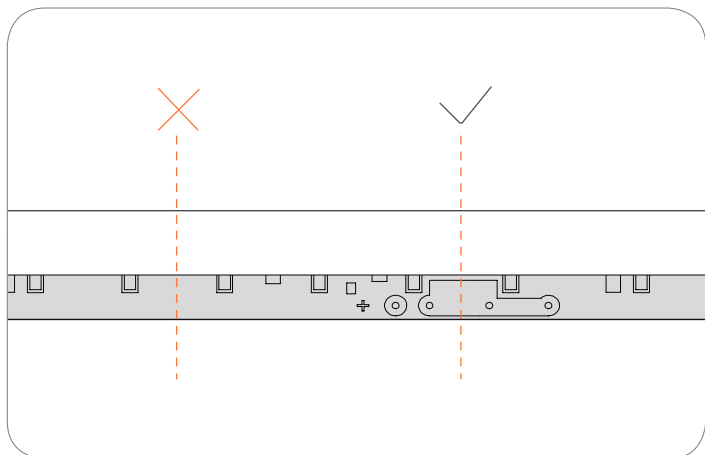
Turn off the power before cutting the LED strip.



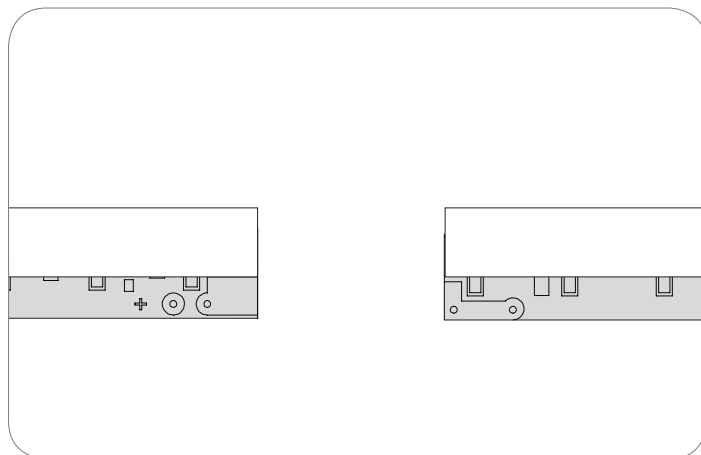
Side view | Make sure the cut is vertical as illustrated in the image above.



Top view | Make sure the cut is vertical as illustrated in the image above.

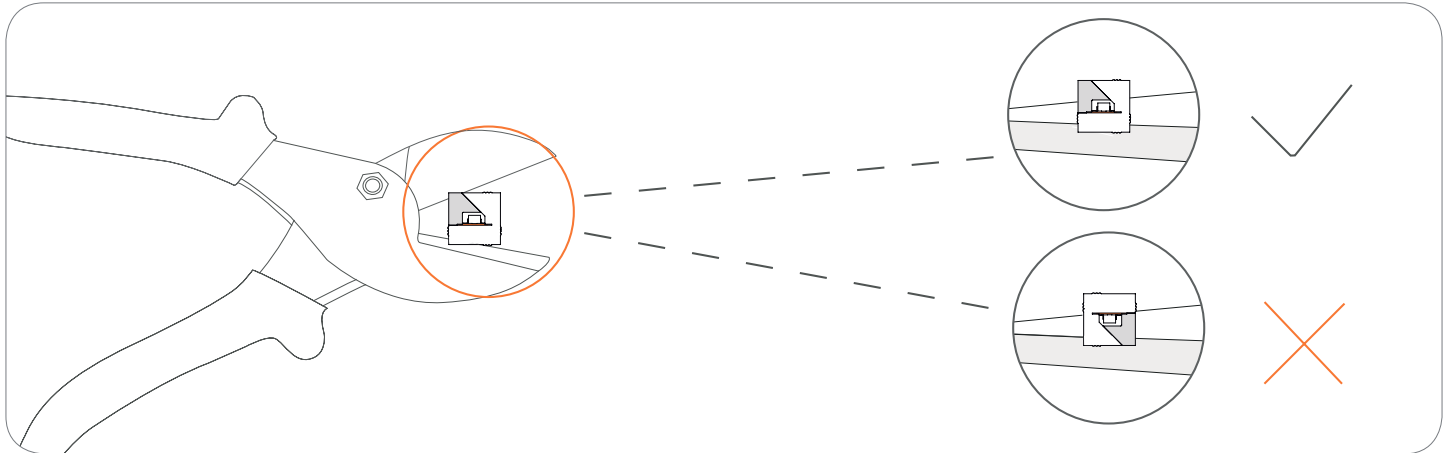


Top view | Only cut on the dotted lines to prevent damaging the LED strip.



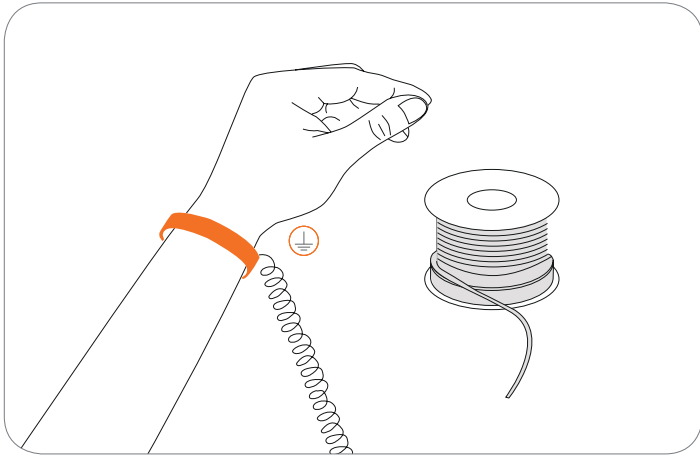
⚠ Dispose of the unnecessary material through waste recycling of electrical and electronic equipment.

Cutting instructions

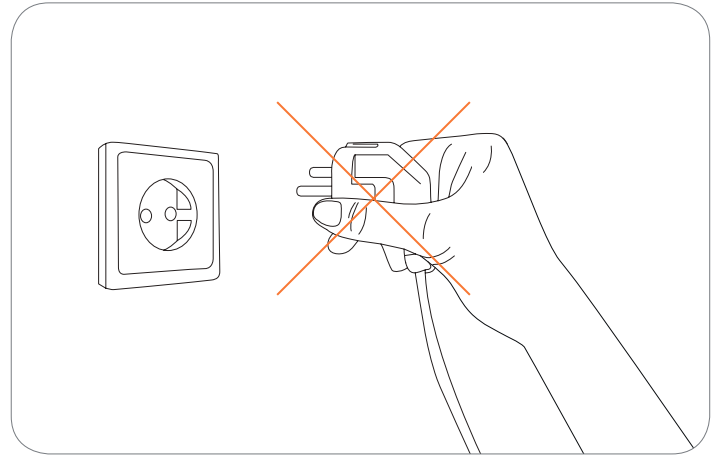


Place the liniLED® LED strip on the base of the cutting tool. Not doing so may result in a deformed LED strip.

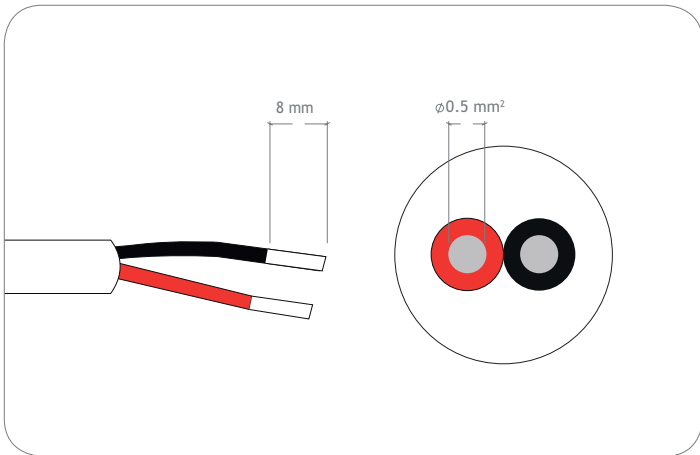
Solder



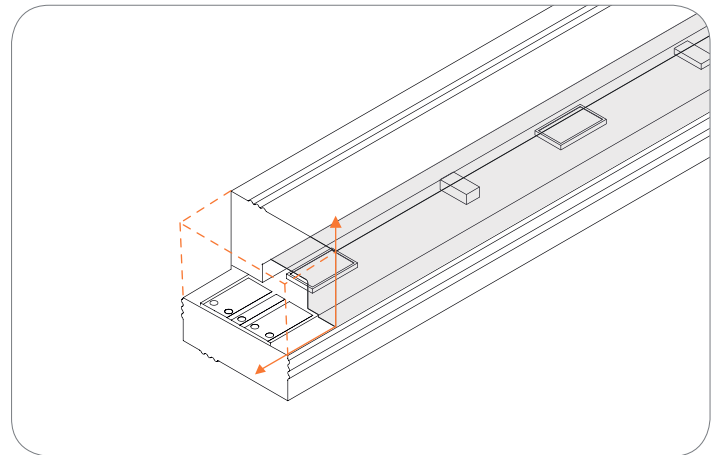
⚠ Work in an ESD protected environment. Make use of an anti-static strap and use lead-free solder.



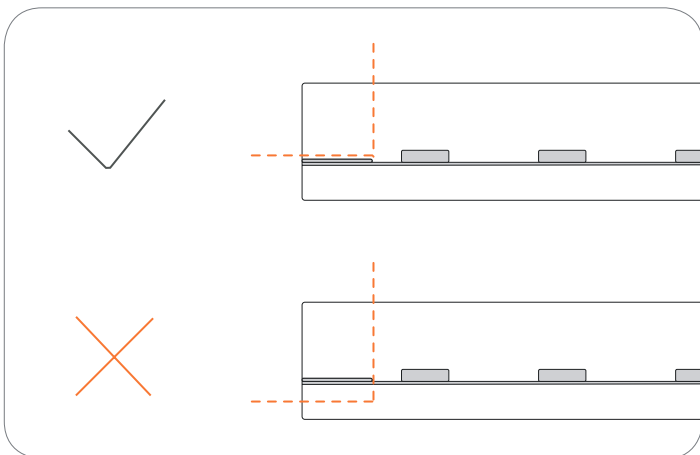
⚠ Turn off the power. Make sure the wires are not under electric current.



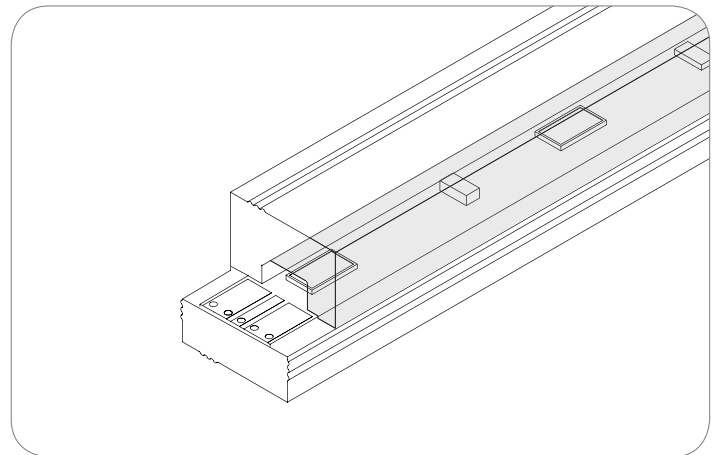
Solder the wires to the PCB. We advise to use a cable with an area not bigger than 0.5 mm^2 .



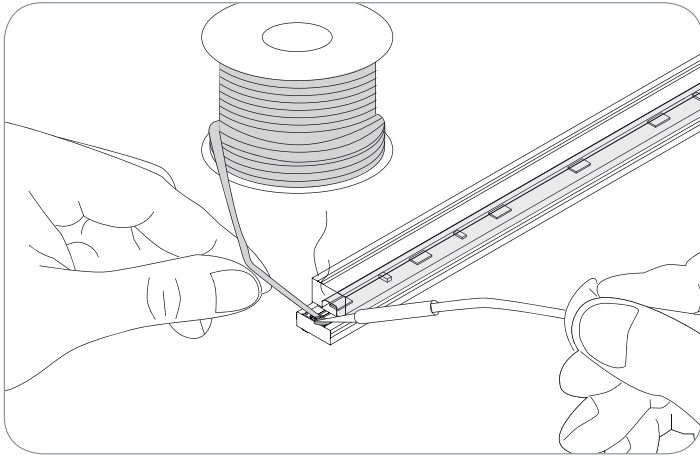
Top view | Only cut the LED strip extrusion on the dotted line of the extrusion to prevent damaging the PCB. Carefully cut away this part of the extrusion.



⚠ **Side view** | Do not cut the PCB!

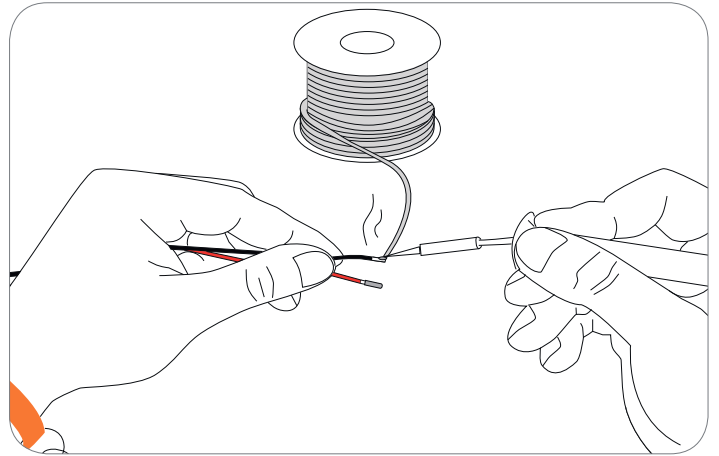


The end result after cutting the LED strip extrusion should look similar to the image above.



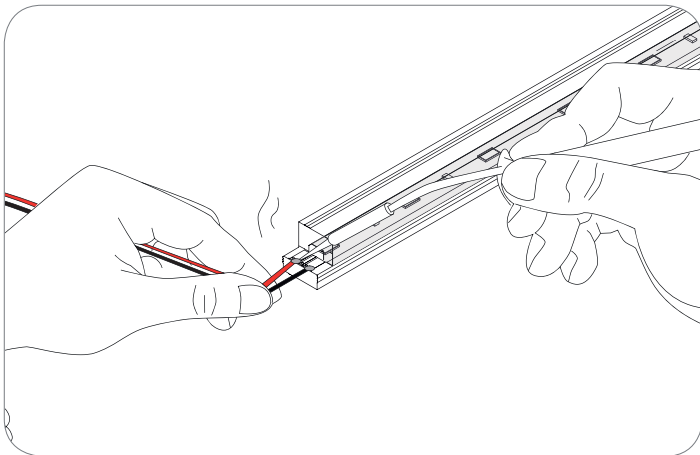
Pre-solder the connector pads.

350° C



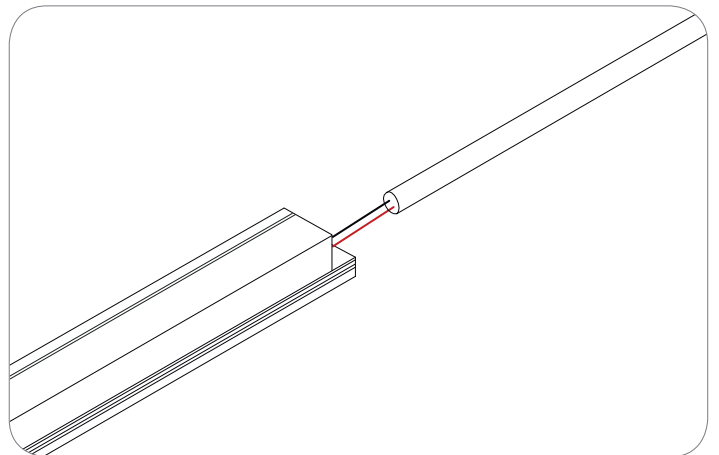
Pre-solder the wires.

350° C



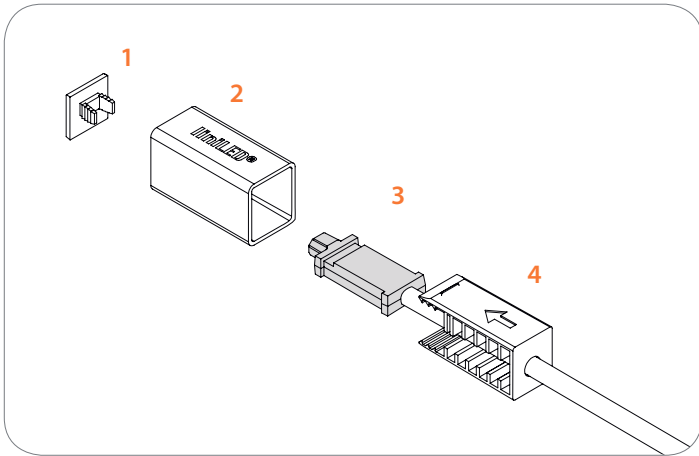
Solder the wires to the connector pads.

350° C

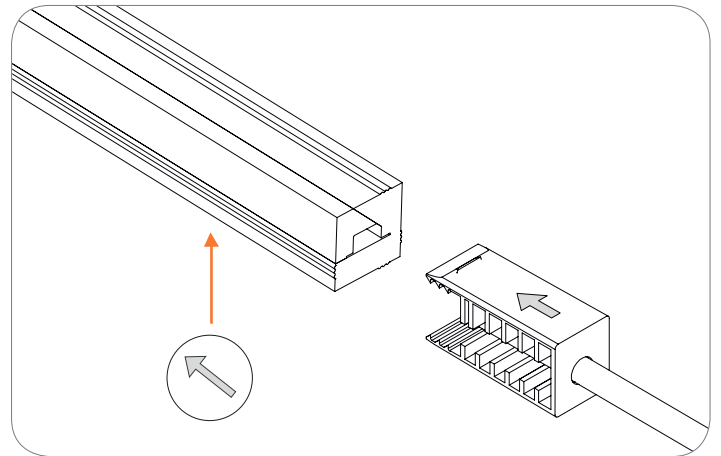


Connect the liniLED® LED strip to the power supply (24 V DC) constant voltage.

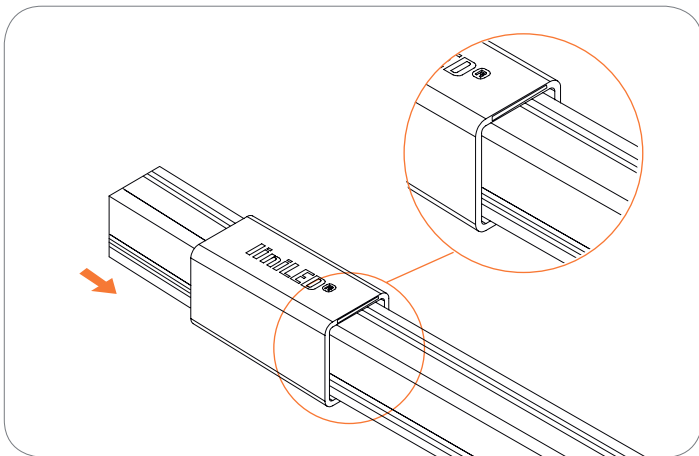
Connect IP40



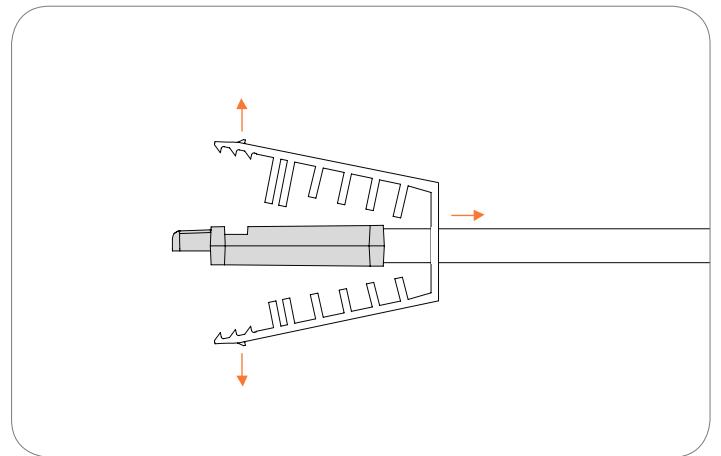
The liniLED® IP40 Connector consists of: End cap (1), Shell (2), Connector (3), Clamp (4).



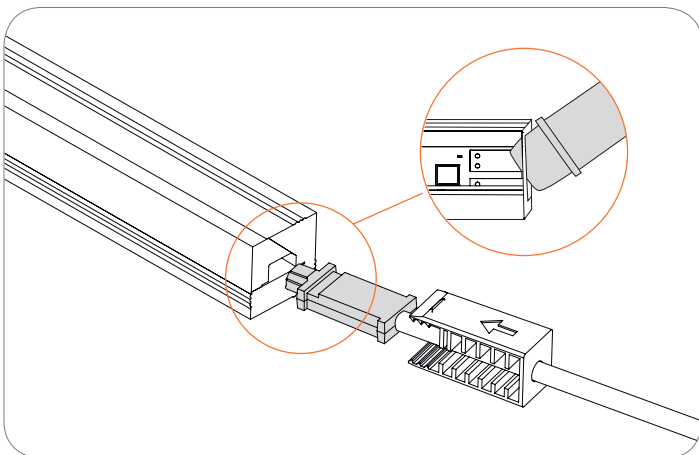
Take into account the direction of the arrow on the bottom of the liniLED® LED strip and align it with the arrow on the clamp (4).



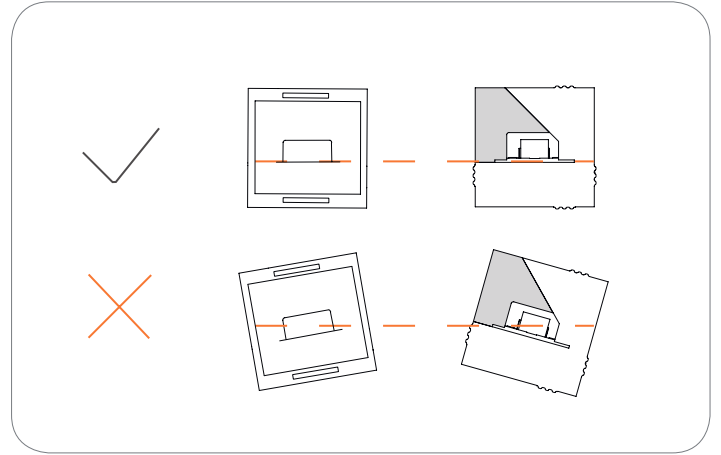
Place the shell (2) over the LED strip. Make sure the side with the smallest opening is put on first.



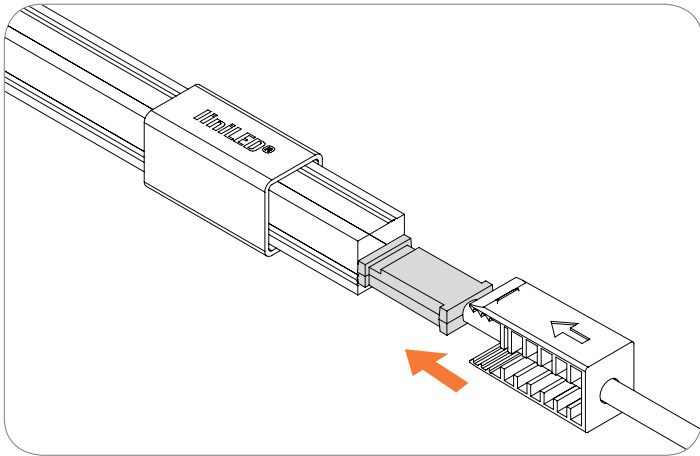
Side view | Slide the clamp (4) over the cable to reveal the connector (3).



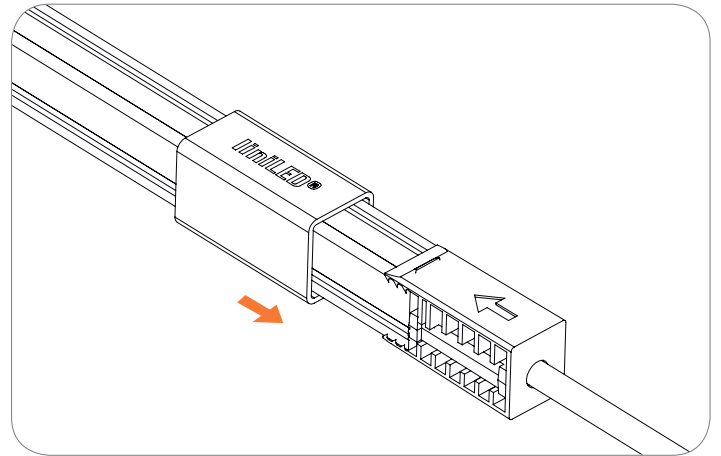
Slide the connector (3) sideways into the hollow chamber of the liniLED® LED strip.



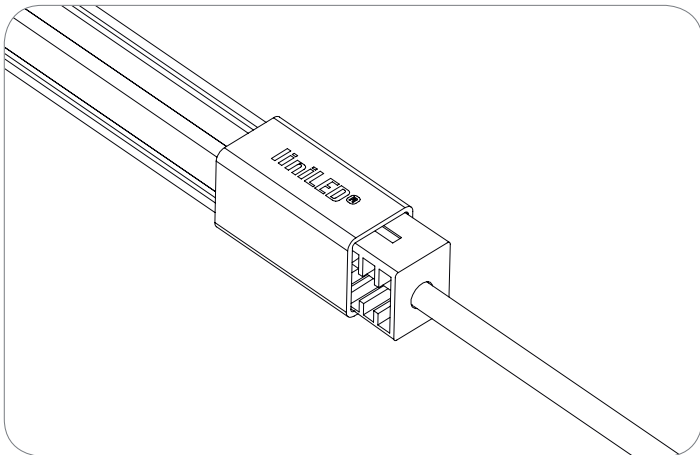
Front view | Make sure the connector and the PCB are perfectly horizontally aligned.



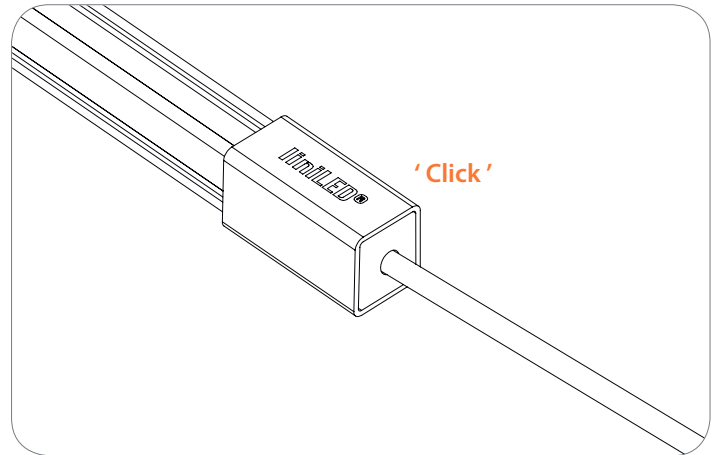
Slide the clamp (4) over the connector (3) and make sure that the arrow is on the upper side.



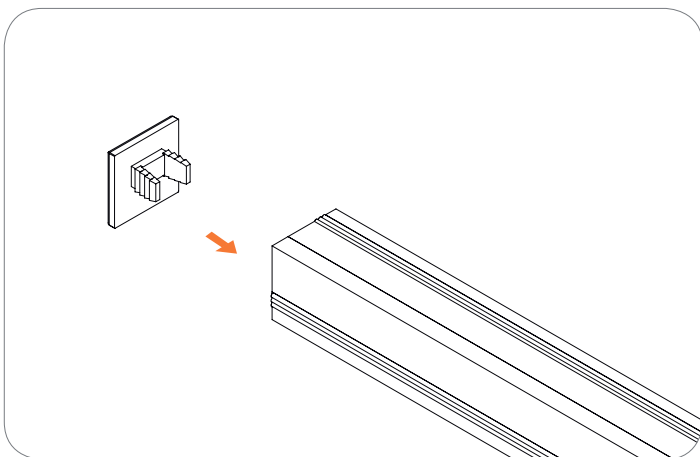
Slide the shell (2) partly over the clamp (4).



Test the liniLED® LED strip before you slide it fully over the clamp (4).

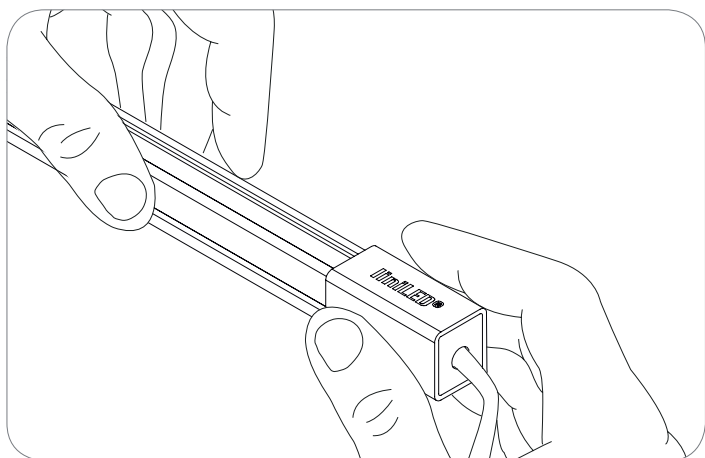


Slide the shell (2) entirely over the clamp (4) and push firmly until it 'clicks'.

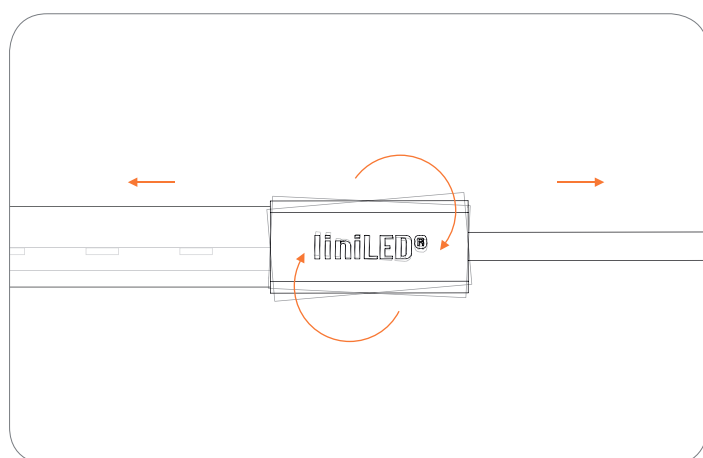


Finish the connection by inserting an end cap (1) in the hollow chamber on the end side of the liniLED® LED strip.

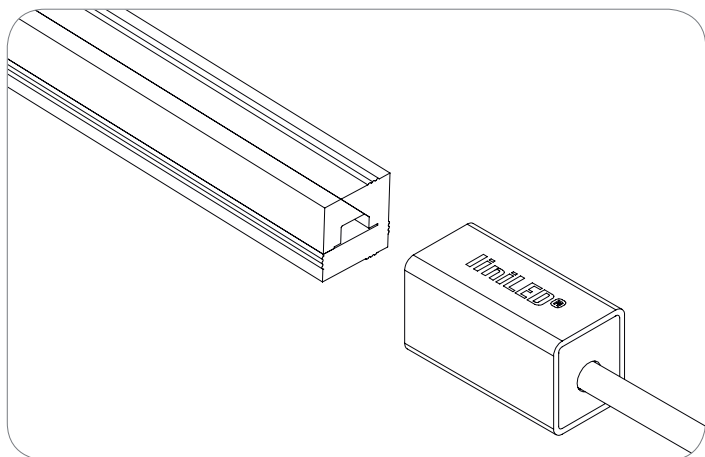
Uninstalling the connector



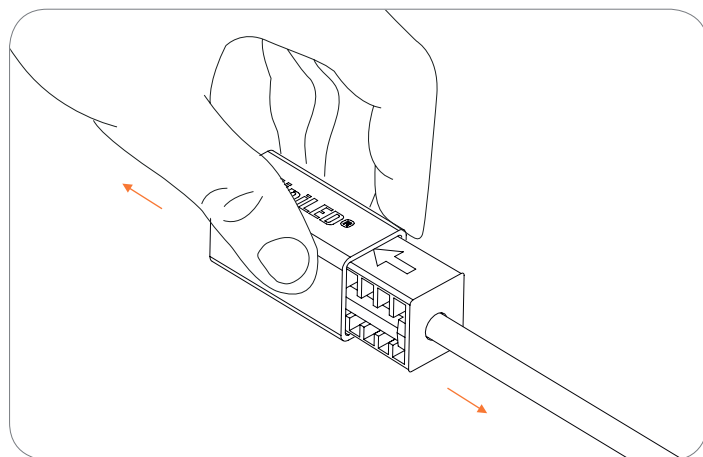
Firmly grab the outer shell and gently grab the liniLED® LED strip.



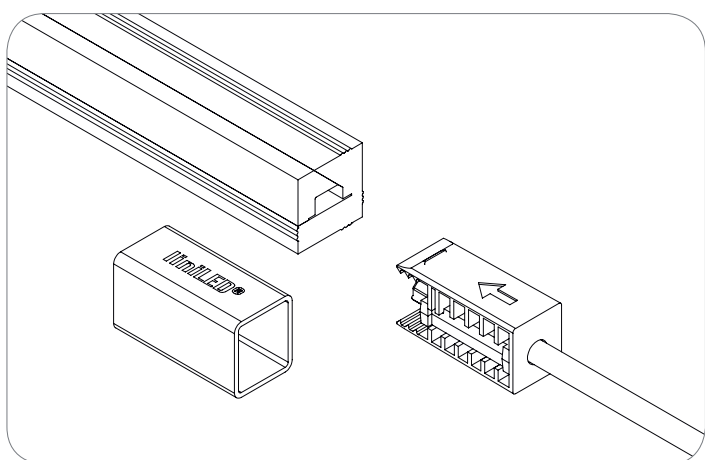
Gently wiggle the connector and pull in opposite direction.



The connector should look like this when it is removed.

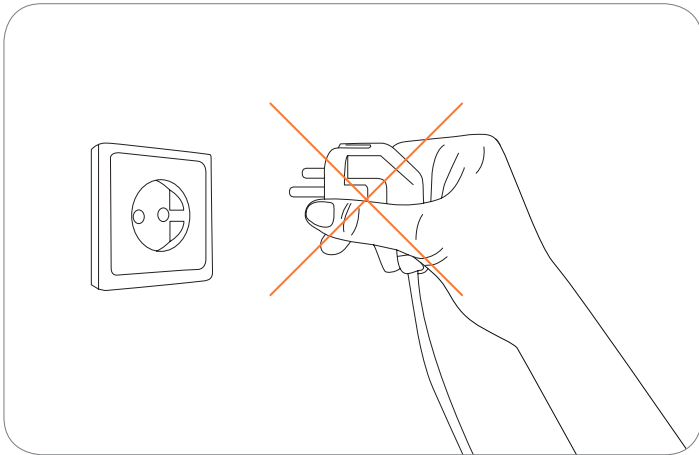


Firmly press the sides of the shell and pull gently while holding the cable to remove it.

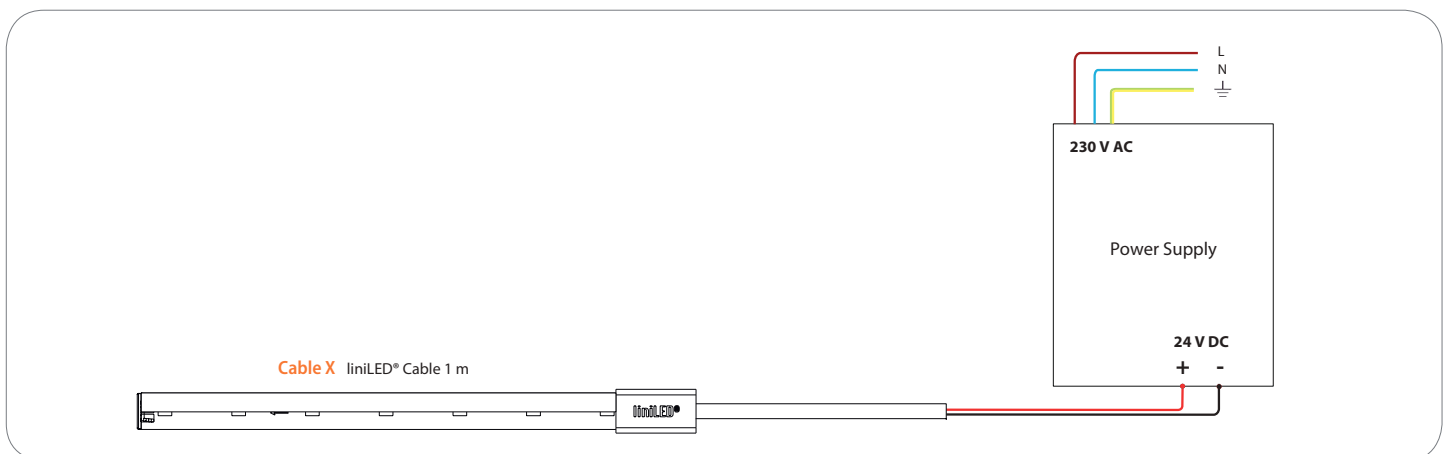


Article number	Description
11202	liniLED® Side Connector set 1 m
11203	liniLED® Side Connector set 5 m
11209	liniLED® Side Extension Cord

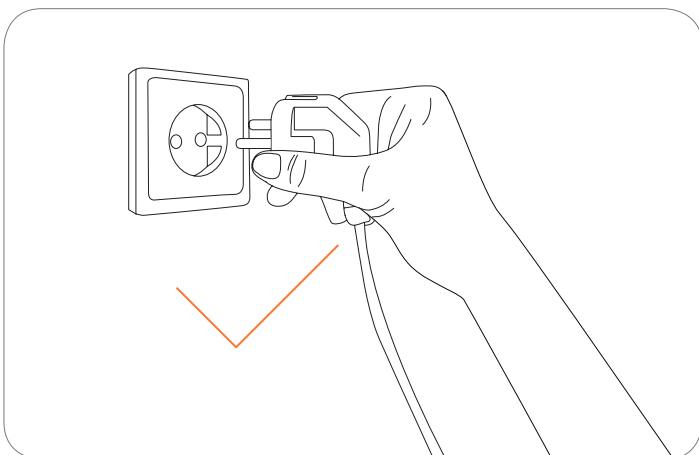
Power supply



⚠ Turn off the power before connecting the LED strip to the power supply.



Connect the LED strip as indicated in the figure above. The wires should be connected as follows: Red (+) and Black (-).



⚠ Insert the power plug.

Symbols

-  Manufacturer's declaration that the product meets the applicable EC directives.
-  Suitable for mounting on all surfaces and suitable to cover with insulating material.
-  Passed glow wire test at 850 degrees Celsius. Global European regulations specify 650 degrees Celsius by default.
-  Restriction of Hazardous Substances (RoHS): product complies with the RoHS directive and each homogeneous material does not exceed the limits for the materials mentioned under the RoHS directive (Pb, Hg, Cd, Cr6+, PBB and PBDE).
-  This product can be both IP40 and IP68 depending on the configuration and application. See the documentation for the exact IP rating.
-  Protected against impact energy of 5 joules.
-  Bending of the LED strip is possible with a radius of ≥ 30 millimetres in the specified direction.
-  Current Voltage. 24 Volt.
-  Electrical appliance class III: this product is designed to be supplied from an extra-low voltage (≤ 60.0 V DC or ≤ 42.4 V AC).
-  Product is resistant against ultraviolet (UV) light or sunlight. Non-UV resistant products can degrade or discolor fast when exposed to UV light.
-  Product can be cleaned with normal cleaning agents as specified in the datasheet under 'chemical compliances'.
-  This product can be stored and used below 0 degrees Celsius. Verify the minimum storage and operation temperature in the datasheet for the lowest temperature allowed.
-  This product can be applied in seawater and its environment. Elements in seawater will have no harmful effect on the product. For chemical specifications see datasheet. Verify the IP rating for proper use.
-  This product can be applied inside swimming pool environments. Elements in the air will have no harmful effect on the product. For chemical specifications of these elements see datasheet. Verify the IP rating for proper use.
-  This product is available on request and can be applied submerged in swimming pools and their environment. Regular swimming pool disinfectants will have no harmful effect on the product. For chemical specifications of these elements see datasheet. Verify the IP rating for proper use.
-  The CRI value of this product is 80 or higher.
-  The binning tolerance of this product is 2 MacAdam.

