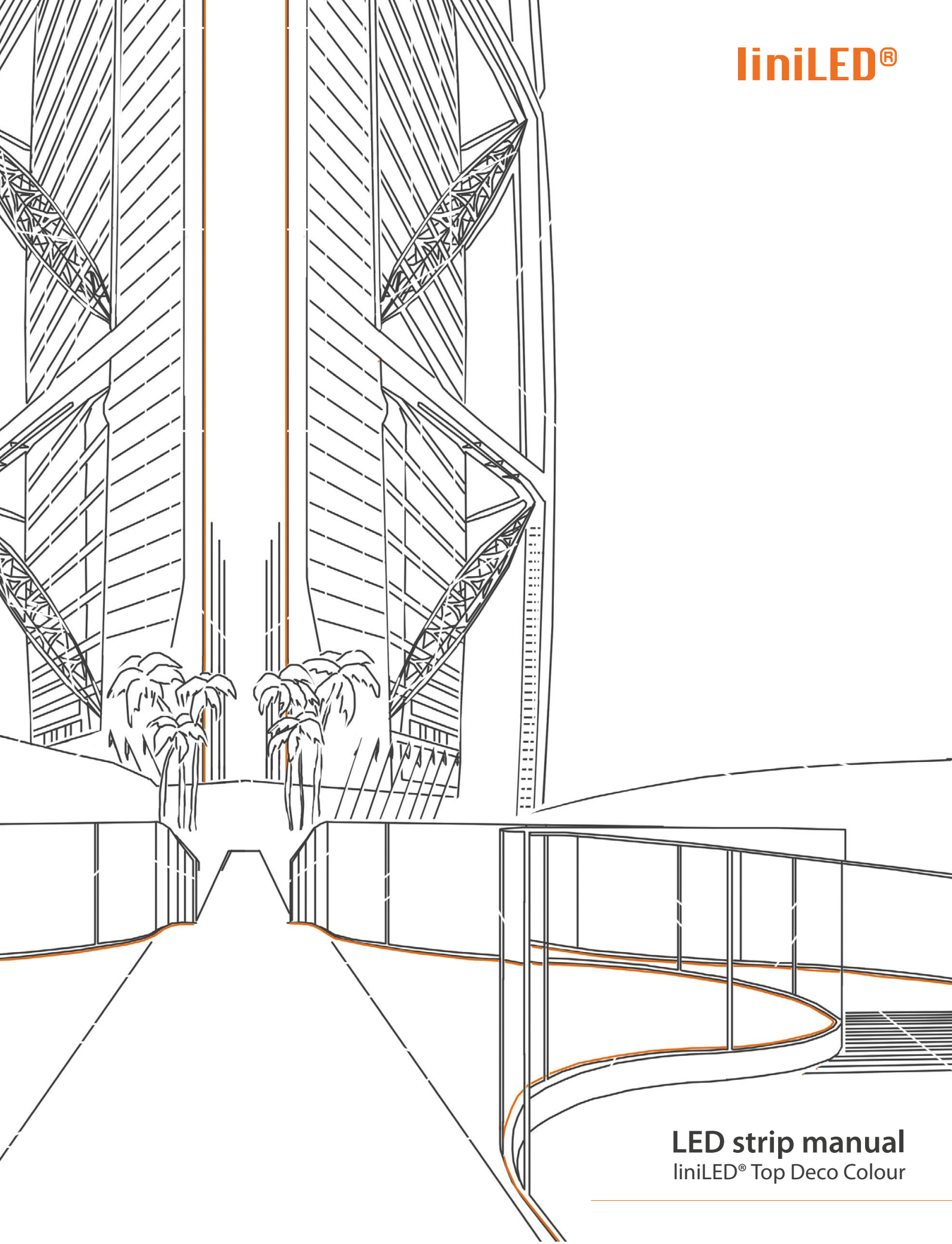
liniLED®



LED strip manual

liniLED® Top Deco Colour

V110920

liniLED®

liniLED® Top Deco Colour

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Technical notes

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 B.V. 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.
- 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.
- Installation has to be done by a certified 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.
- The LED strip should be installed on an adequate cooling body for proper heat dissipation to ensure smooth operation and long lifetime.
- Do not fasten anything to the product. The same applies when hanging.
- 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. This could lead to an electrical shock or a short circuit may occur.
- Children may not play unsupervised with electrical products as they cannot judge the dangers in dealing with electrical circuits correctly.
- Use proper mounting surfaces when installing in environments with large variations in temperature and operating lengths more than 2 metres. This should absorb the stress of any difference in expansion.

Operation and use

Solely use the product when it's working correctly. If not, switch the power off immediately and ask an electrical specialist for advice in the following cases:

- Damage is visible on the product and/or the product does not function.
- The product is overheating and/or smoke or steam rises from the product.
- Crackling sounds are noticeable.

Repairs on the installation may only be performed by qualified electricians. Product repairs may solely be done by Triolight B.V.

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.

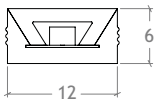
Warranty

This product comes with a 2 year warranty. Warranty void if:

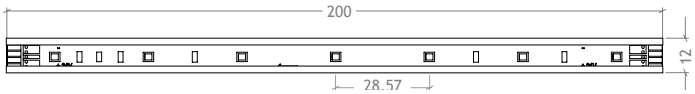
- The installation guide has not been consulted (installation mistake).
- The installation is not done by a certified installer.
- Local rules and guidelines are not respected.
- The invoice cannot be shown and/or has been altered.
- Damage is caused by negligence, abnormal use or improper handling,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

Top Deco colour - Product drawings

LED strip front view



LED strip top view



Product information

The liniLED® Top Deco LED strip IP40 (IP68*) is a high quality, flexible LED strip, with a unique co-extrusion technology. The combination of high quality and exceptional flexibility, allows for an endless range of indoor and outdoor applications.

* For usage in wet enviroments, use the liniLED® IP68 Kit or mirror welded.

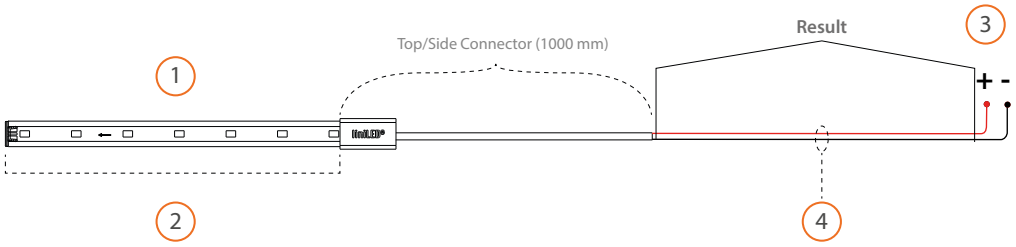
Product specifications

Colour	LED/m	V DC	W/m	lm/m	Temp °C	Max. Length	B50/L70
Red	35	24	4.4	55	-30...55[1]	20 m	> 50.000 h
Green	35	24	2.5	106	-30...55[1]	20 m	> 50.000 h
Blue	35	24	1.7	23	-30...55[1]	20 m	> 50.000 h
Amber	35	24	4.4	47	-30...55[1]	20 m	> 50.000 h

[1]Max. connection length between -30 °C and -20 °C is 14 metres.

Cable selection

1 = Select colour temperature.
2 = Select LED strip length.
3 = Select output voltage.
4 = Select cable cross section.
Result = Maximum cable length based on the cable thickness and power supply voltage.



1. Colour temperature		Red - Amber							
2. LED strip length		1 m		2 m		5 m		10 m	
3. Output voltage		*24 V DC*	*25 V DC*	*24 V DC*	*25 V DC*	*24 V DC*	*25 V DC*	*24 V DC*	*25 V DC*
4. Cable cross section	**0.50 mm²** - 0.035 Ω/m	69.1 m	133.9 m	12.8 m	25.7 m	5.7 m	12.2 m	2.2 m	5.4 m
	0.75 mm² - 0.023 Ω/m	104.0 m	201.5 m	19.2 m	38.7 m	8.6 m	18.4 m	3.3 m	8.2 m
	1.00 mm² - 0.018 Ω/m	138.3 m	267.9 m	25.6 m	51.5 m	11.5 m	24.4 m	4.4 m	10.9 m
	1.50 mm² - 0.012 Ω/m	208.0 m	403.0 m	38.5 m	77.5 m	17.3 m	36.8 m	6.7 m	16.4 m
	2.50 mm² - 0.007 Ω/m	346.2 m	670.7 m	64.1 m	128.9 m	28.8 m	61.2 m	11.2 m	27.4 m

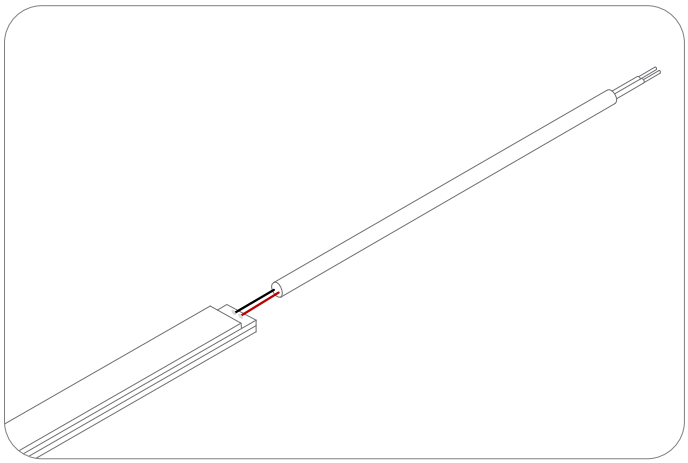
1. Colour temperature		Blue							
2. LED strip length		1 m		2 m		5 m		10 m	
3. Output voltage		*24 V DC*	*25 V DC*	*24 V DC*	*25 V DC*	*24 V DC*	*25 V DC*	*24 V DC*	*25 V DC*
4. Cable cross section	**0.50 mm²** - 0.035 Ω/m	181.0 m	348.7 m	35.1 m	68.7 m	16.9 m	33.7 m	7.8 m	16.2 m
	0.75 mm² - 0.023 Ω/m	272.3 m	524.6 m	52.9 m	103.3 m	25.4 m	50.7 m	11.7 m	24.3 m
	1.00 mm² - 0.018 Ω/m	362.0 m	697.4 m	70.3 m	137.4 m	33.8 m	67.4 m	15.6 m	32.4 m
	1.50 mm² - 0.012 Ω/m	544.6 m	1049.2 m	105.8 m	206.7 m	50.9 m	101.4 m	23.5 m	48.7 m
	2.50 mm² - 0.007 Ω/m	906.3 m	1746.1 m	176.1 m	344.0 m	84.8 m	168.8 m	39.2 m	81.2 m

1. Colour temperature		Green							
2. LED strip length		1 m		2 m		5 m		10 m	
3. Output voltage		*24 V DC*	*25 V DC*	*24 V DC*	*25 V DC*	*24 V DC*	*25 V DC*	*24 V DC*	*25 V DC*
4. Cable cross section	**0.50 mm²** - 0.035 Ω/m	122.6 m	236.7 m	23.5 m	46.3 m	11.1 m	22.5 m	4.9 m	10.6 m
	0.75 mm² - 0.023 Ω/m	184.5 m	356.1 m	35.3 m	69.6 m	16.7 m	33.8 m	7.3 m	15.9 m
	1.00 mm² - 0.018 Ω/m	245.3 m	473.4 m	47.0 m	92.6 m	22.2 m	45.0 m	9.8 m	21.2 m
	1.50 mm² - 0.012 Ω/m	369.0 m	712.2 m	70.7 m	139.3 m	33.4 m	67.7 m	14.7 m	31.9 m
	2.50 mm² - 0.007 Ω/m	614.2 m	1185.3 m	117.7 m	231.9 m	55.6 m	112.7 m	24.6 m	53.1 m

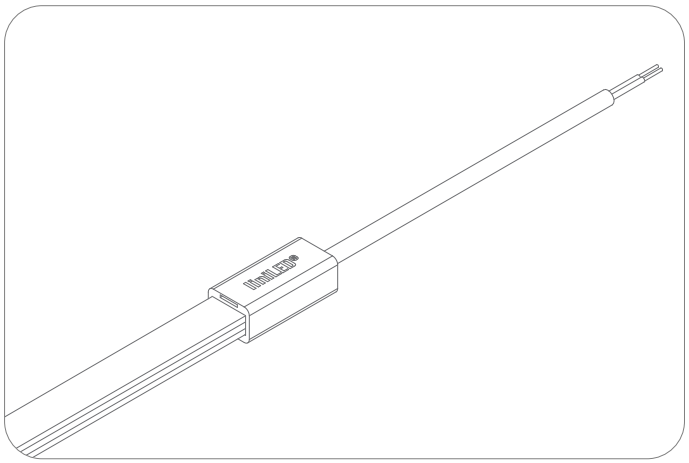
⚠ **Note:** Calculations are based on a standard connector with 1 metre cable (0.5 mm²).

Area advice

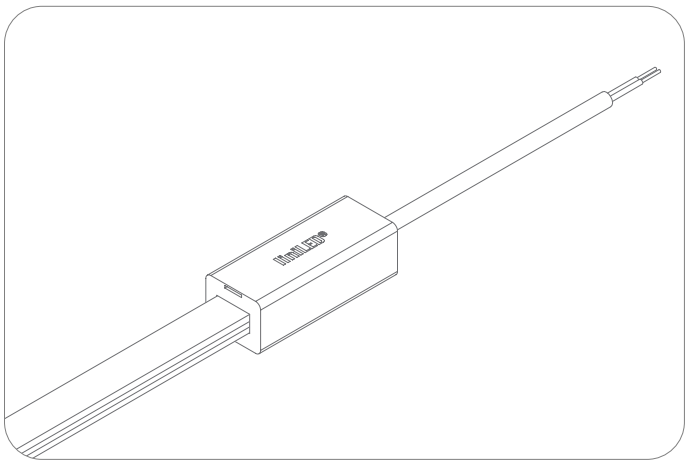
Depending on the installation area of the liniLED® LED strip we offer a range of IP40, IP67 and IP68 solutions to cope with external factors. Below the different connectors are displayed for use in different environments. See corresponding pages or individual product manual for further instructions.



Indoor environment | (IP20)
Solder

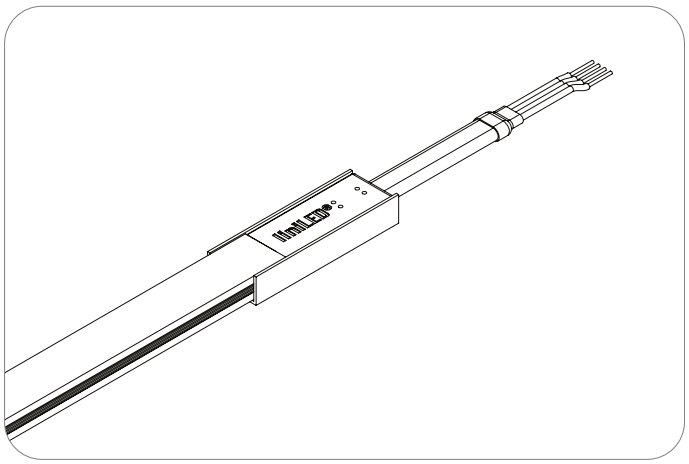


Indoor environment | (IP40) | liniLED® Top Connector set.
Product code: 11200 (1 m), 11201 (5 m)



Wet environment | (IP67) | liniLED® Top IP67 Kit
Product code: 11490

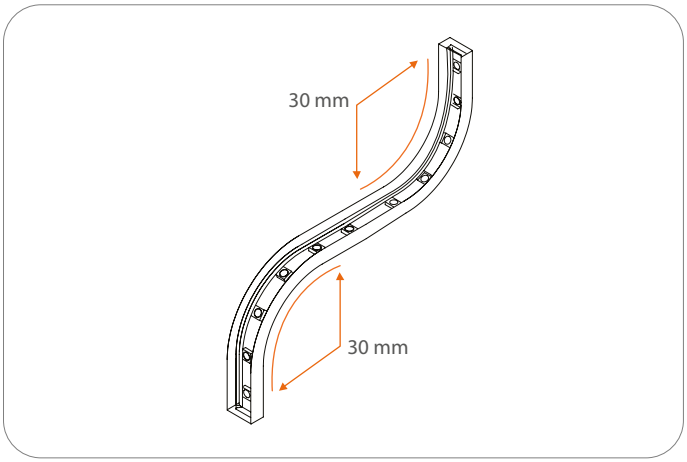
See Manual liniLED® Top IP67 Kit for installation instructions.



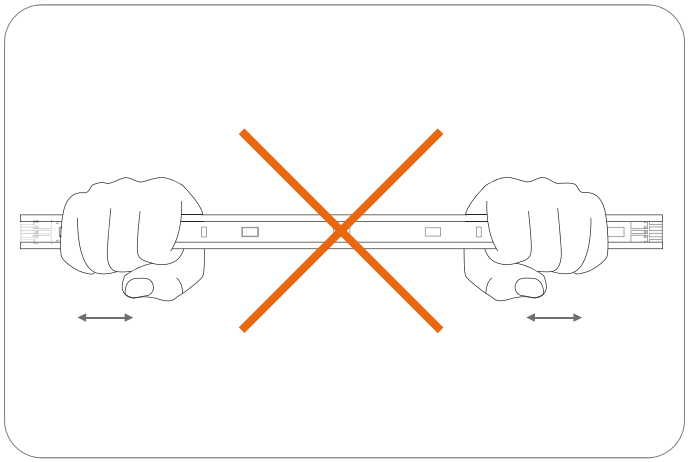
Submersible, chlorine resistant | (IP68) | Welded Connector
Product code: 12296 1m
12297 5m

The connector is pre-assembled to the LED strip.

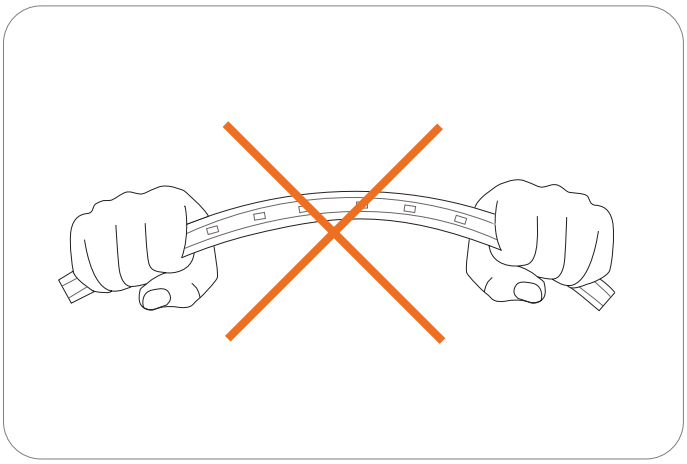
Product care and handling



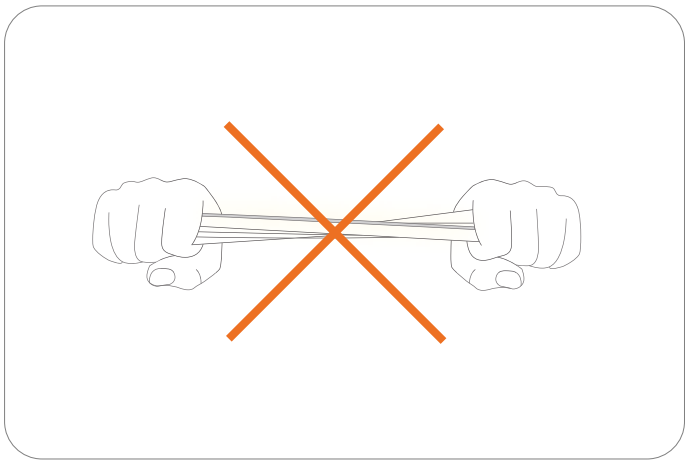
Maximum bending radius is 30 mm. Solely bend up or downward.



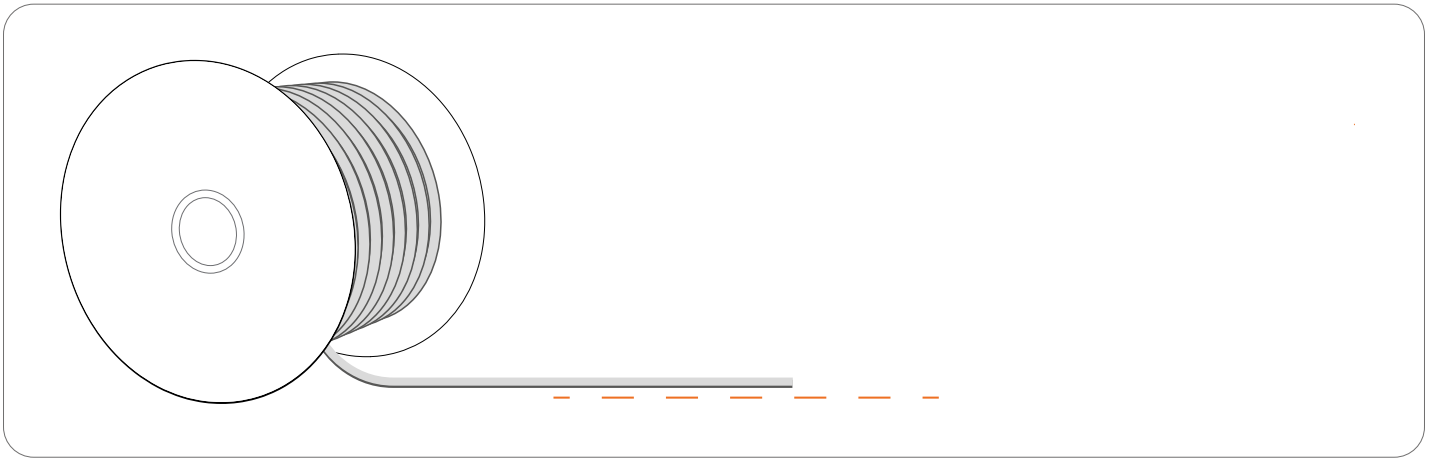
⚠ Do **not** compress or stretch the LED strip.



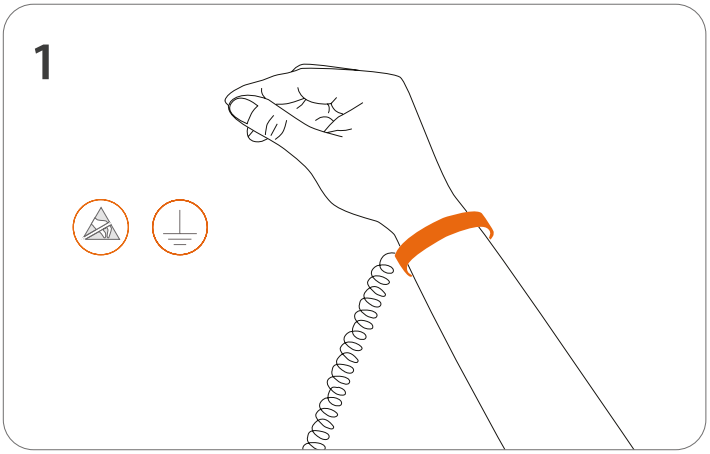
⚠ Do **not** bend the LED strip sidewards.



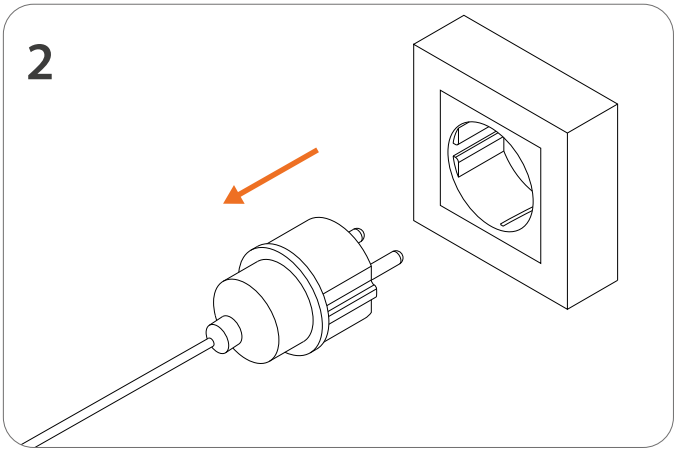
⚠ Do **not** twist the LED strip.



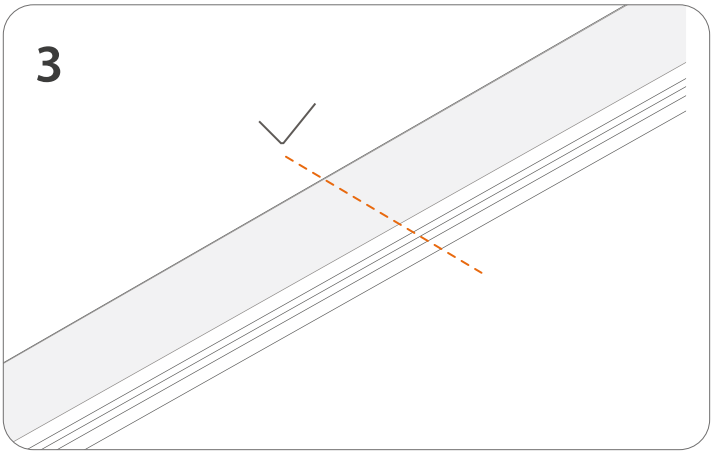
The LED strip has to be unreeled on a horizontal surface at the time of installation. Do not unreel the spool of LED strip before installation.



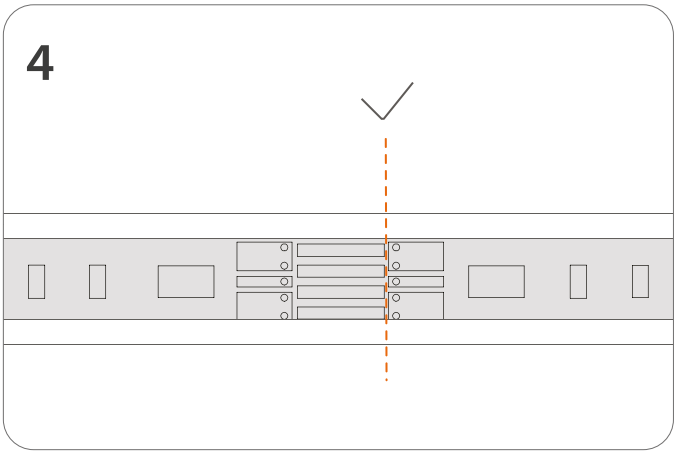
Work in an ESD protected environment. Make use of an anti-static strap.



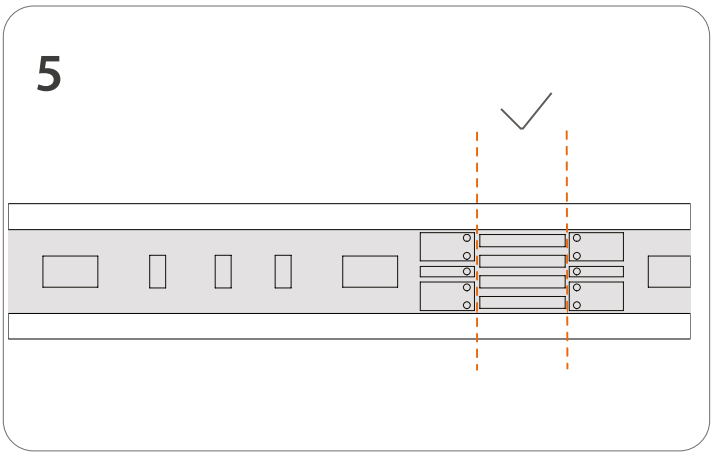
Turn off the power before cutting the LED strip.



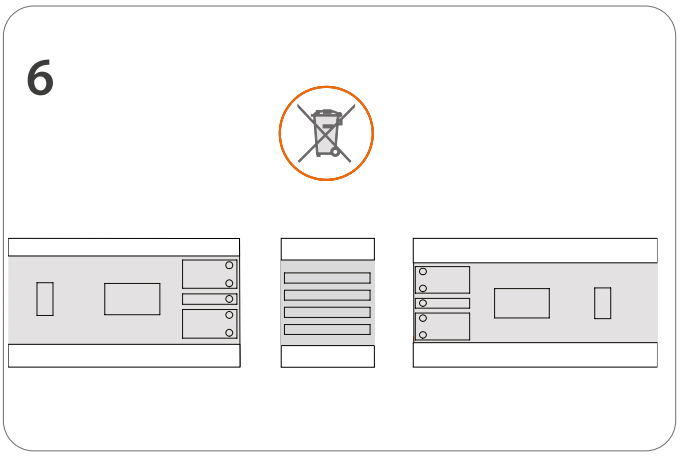
Side view | Make sure the cut is vertical as illustraded in the image above.



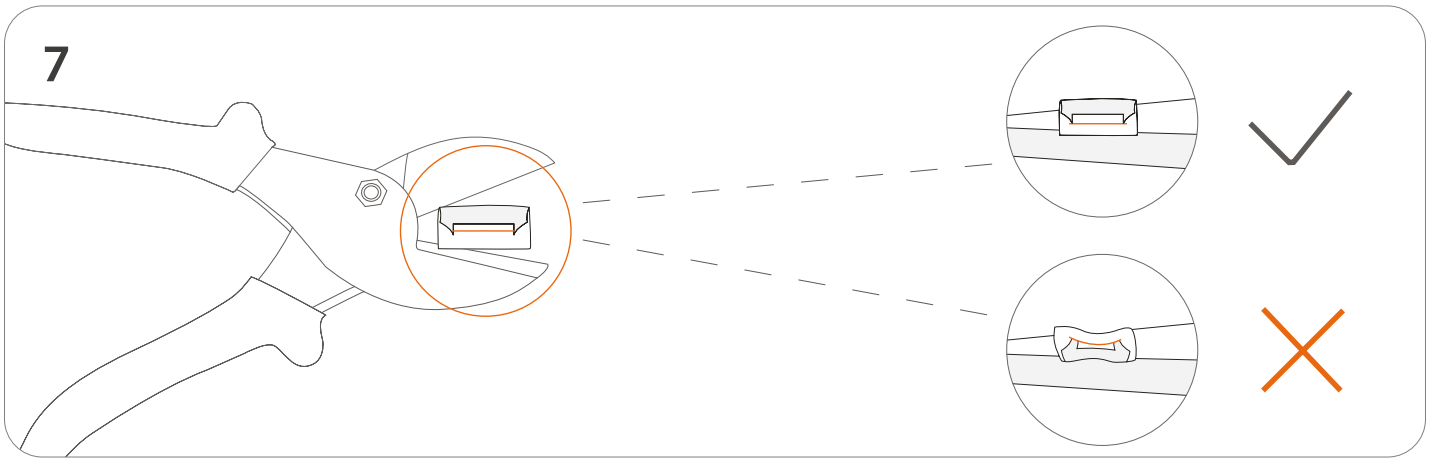
Top view | Make sure the cut is vertical as illustraded in the image above.



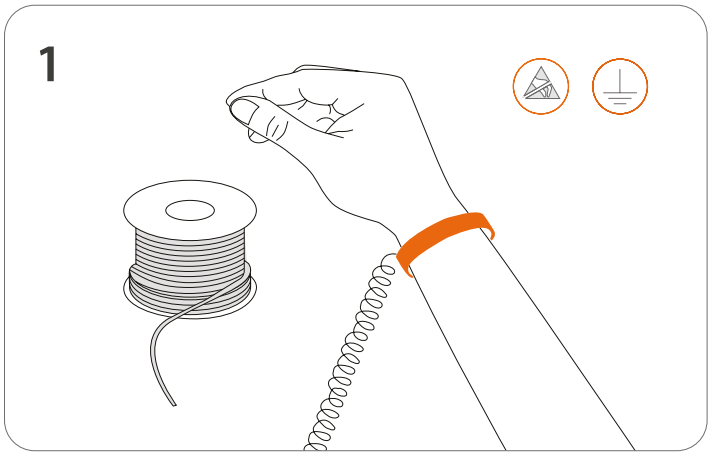
Top view | Only cut on the dotted lines to prevent damaging the LED strip.



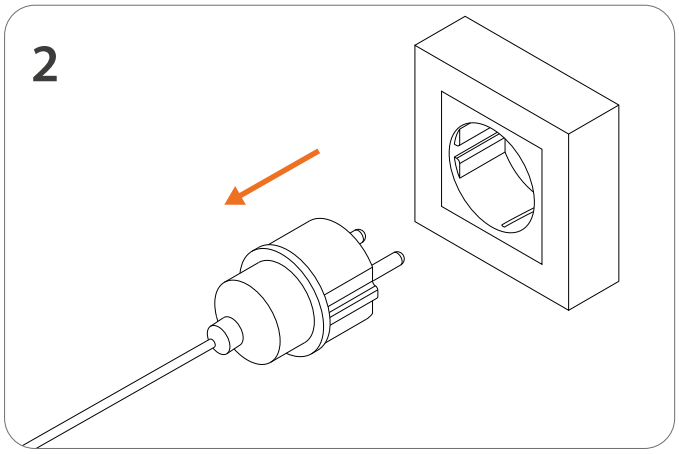
⚠ Dispose of the unnecessary material through waste recycling of electrical and electronic equipment.



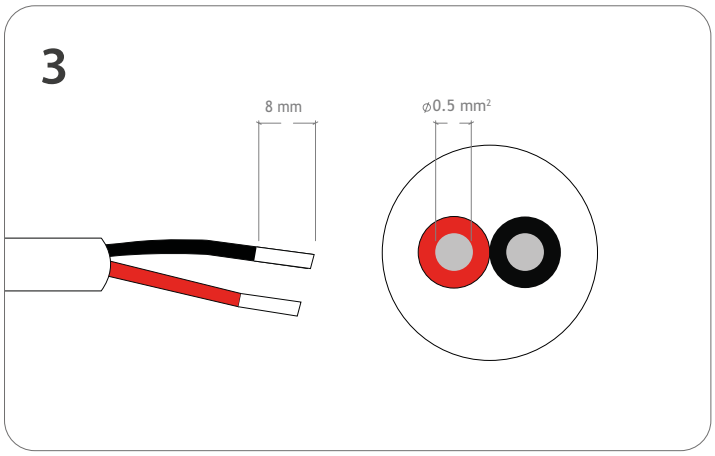
Place the liniLED® LED strip on the base of the cutting tool. Not doing so may result in a deformed LED strip.



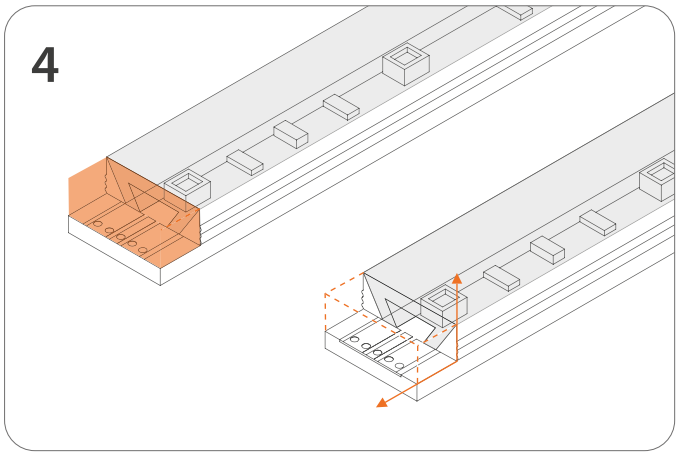
Work in an ESD protected environment. Make use of an anti-static strap.



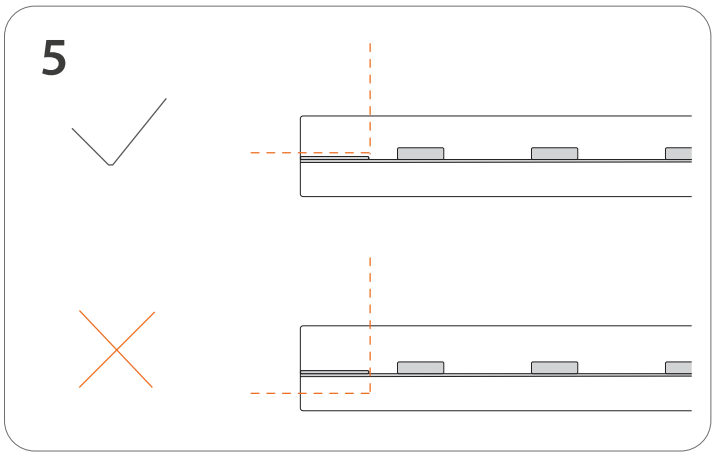
⚠ Turn off the power. Make sure the wires are not under electric current.



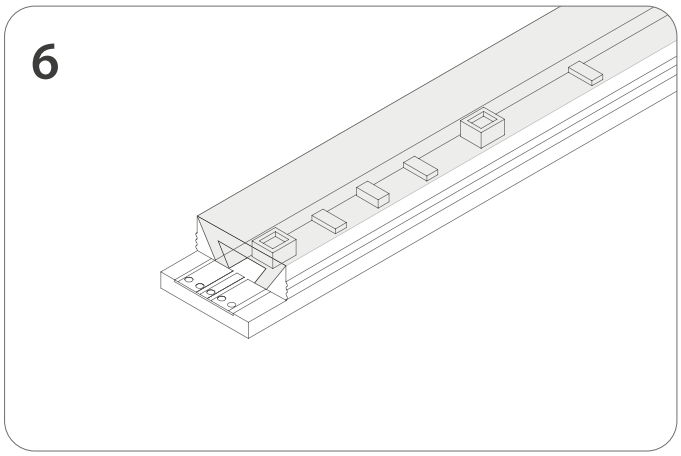
Solder the wires to the PCB. We advise to use a cable with an area not higher then 0.5 mm^2.



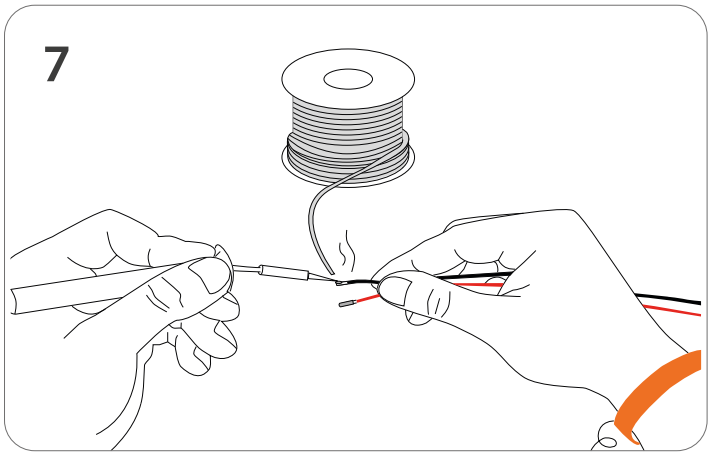
Top view | Only cut the LED strip extrusion on the dotted line of the extrusion to prevent damaging the PCB. Carefully cut away this part of the extrusion.



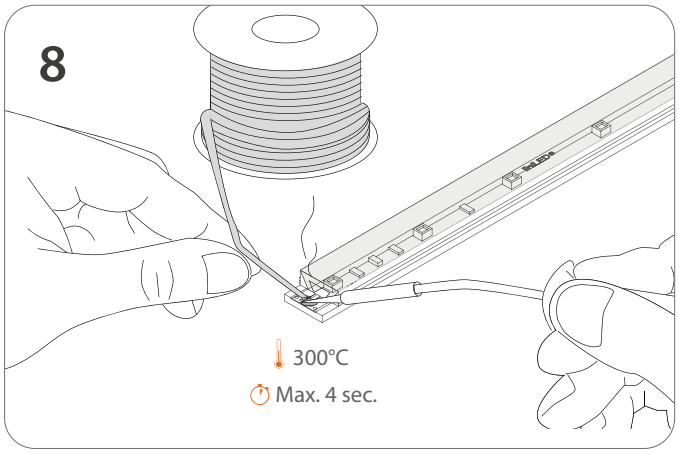
Side view | Do **not** cut the PCB!



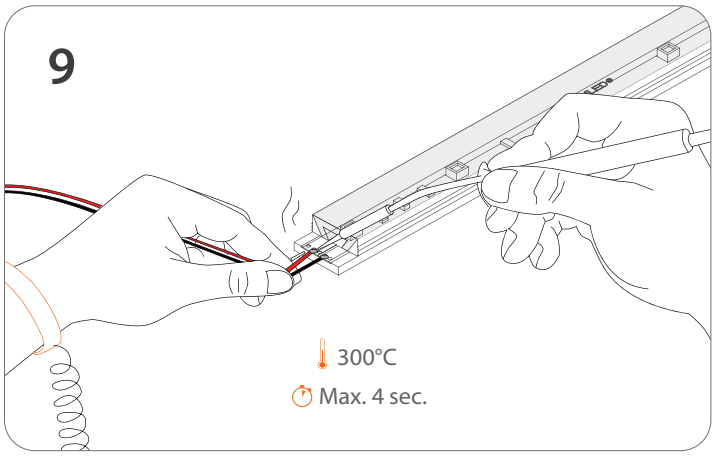
The end result after cutting the LED strip extrusion should look similar to the image above.



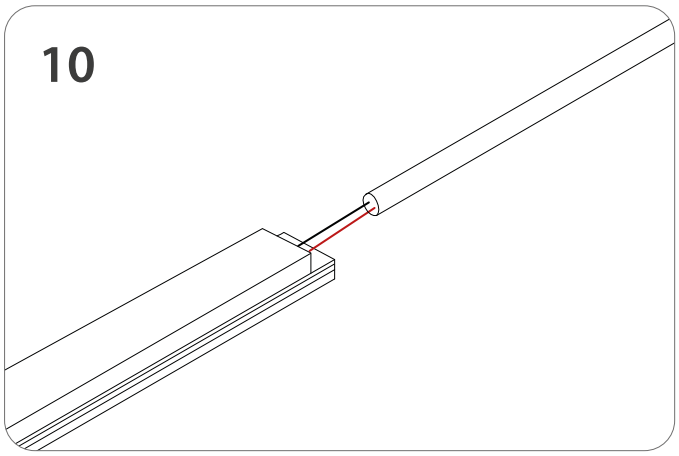
Pre-solder the wires.



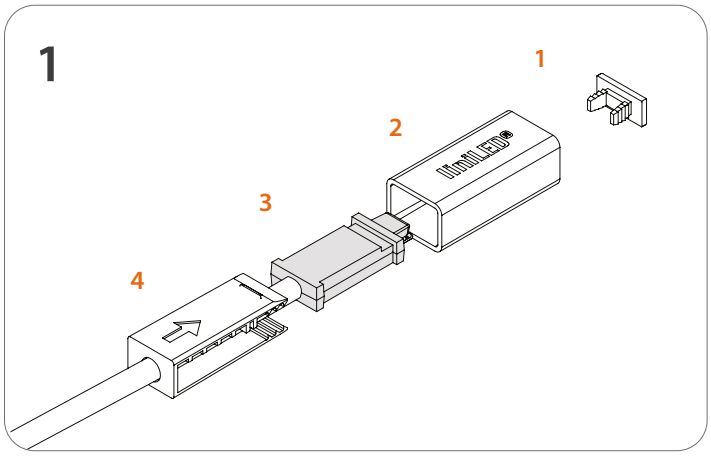
Pre-solder the connector pads.



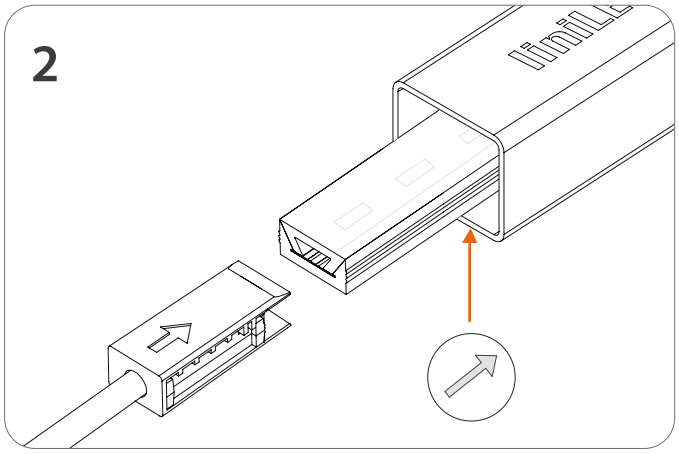
Solder the wires to the connector pads.



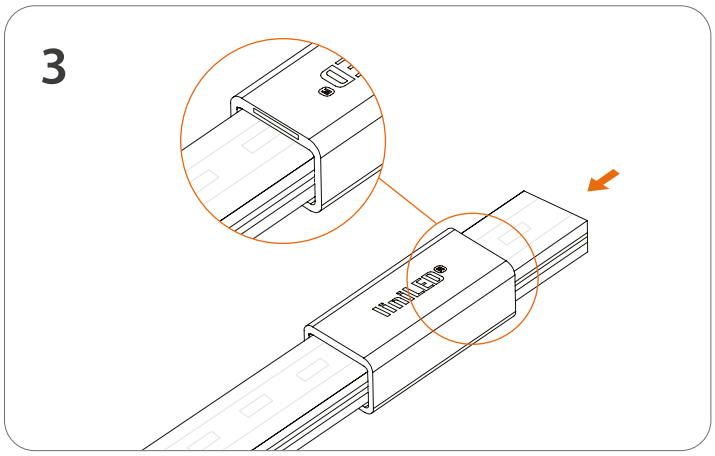
Connect the liniLED® LED strip to the power supply (24 V DC) constant voltage.



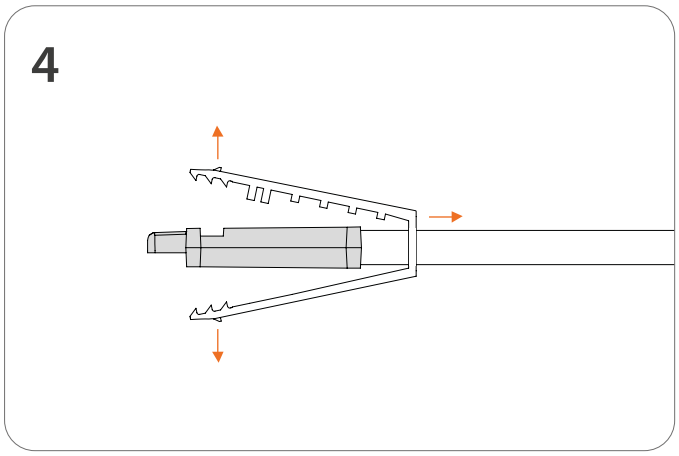
The liniLED® IP40 Connector consists of: End cap (1), Shell (2), Connector (3), Clamp (4).



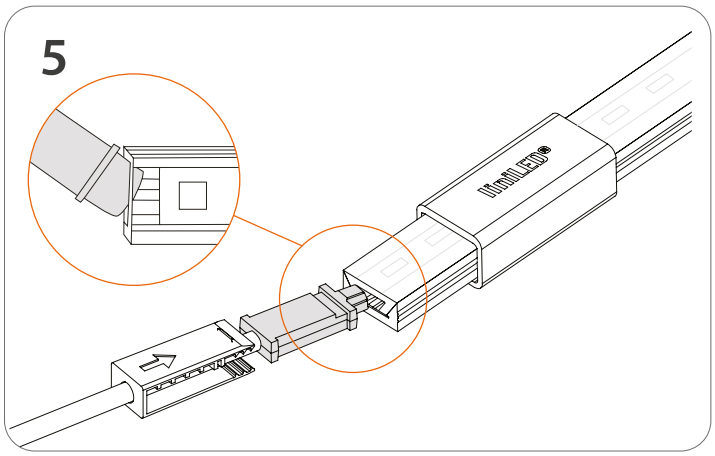
Take into account the direction of the arrow on the bottom of the liniLED® LED strip and allign it with the arrow on the clamp (4).



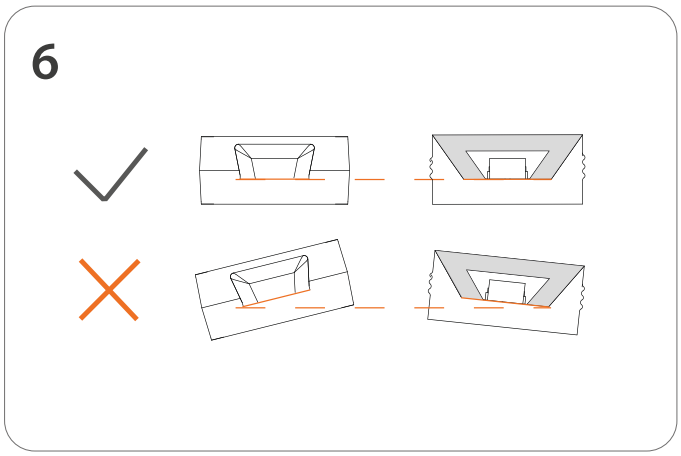
Place the shell (2) over the LED strip. Make sure the side with the smallest opening is put on first.



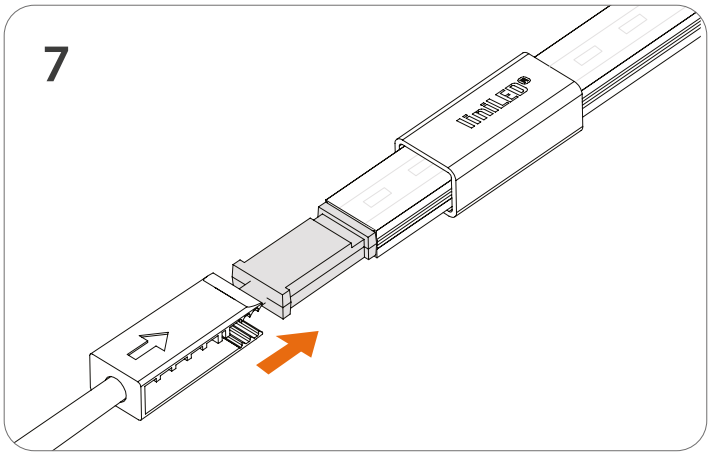
Side view | Slide the clamp (4) over the cable to reveal the connector (3).



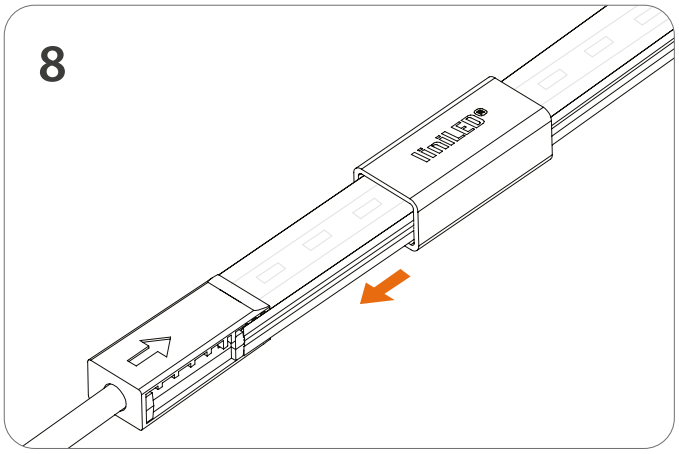
Slide the connector (3) sideways into the hollow chamber of the liniLED® LED strip. **Side view** | Do **not** cut the PCB!



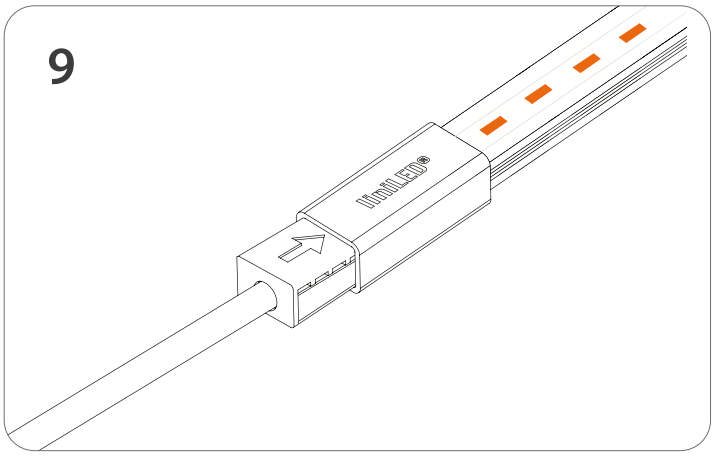
Front view | Make sure the connector and the PCB are perfectly horizontally alligned.



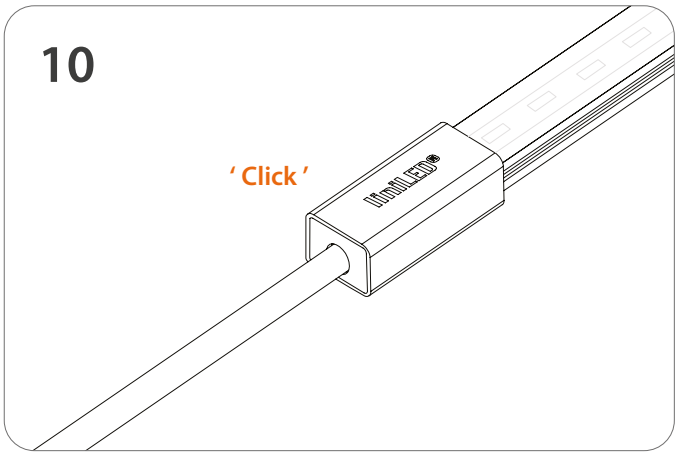
Slide the clamp (4) over the connector (3) and make sure that the arrow is on the upper side.



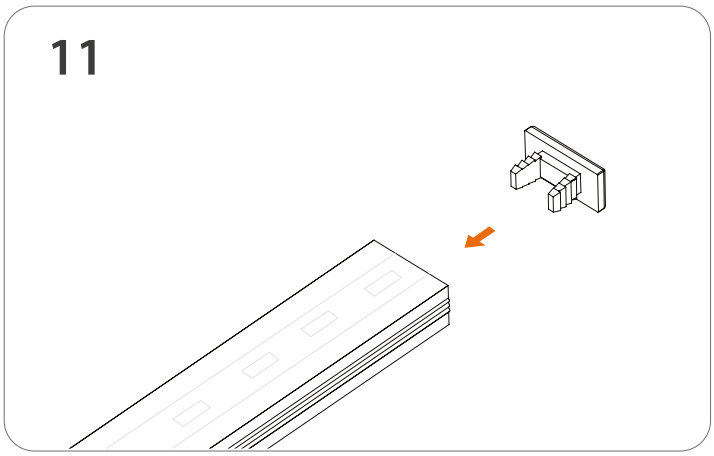
Slide the shell (2) partly over the clamp (4).



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

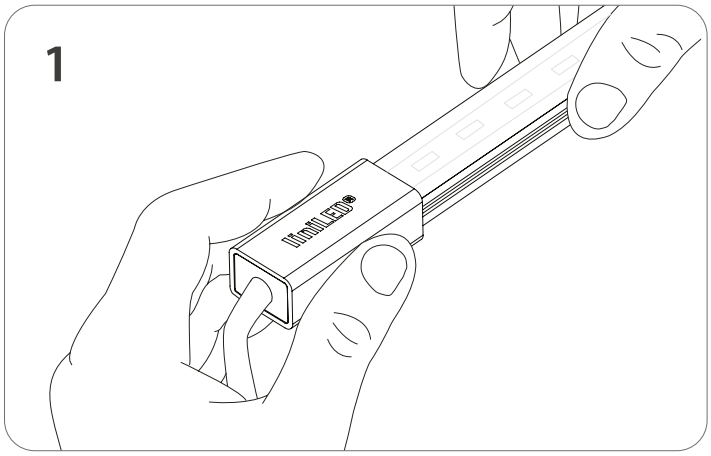


Slide the shell (2) entirely over the clamp (4) and push firmly until it ‘clicks’.

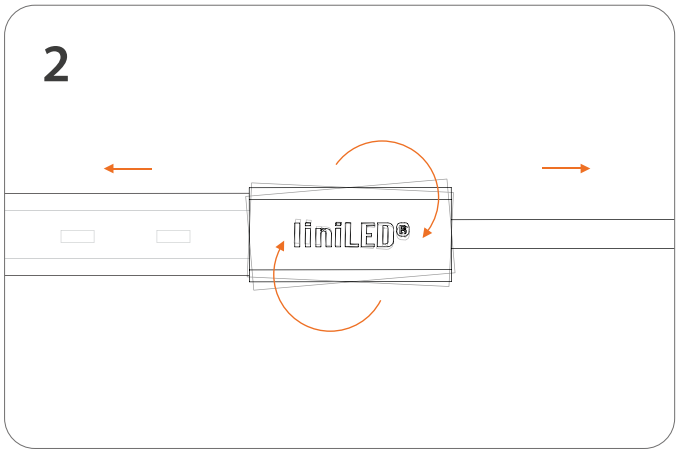


Finish the connection by inserting an end cap (1) in the hollow chamber on the end side of the liniLED® LED strip.

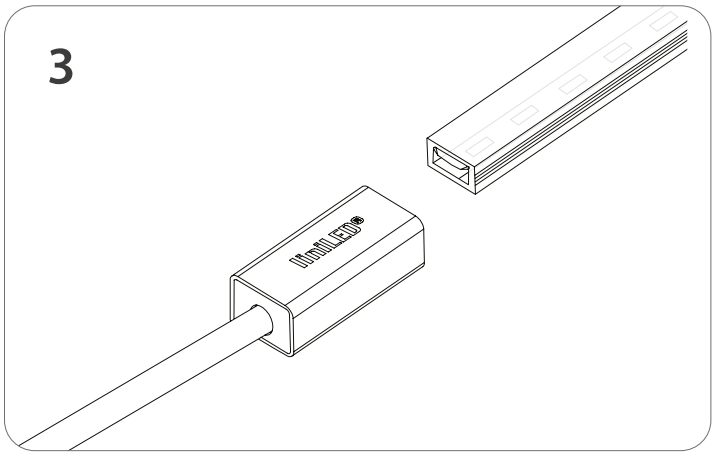
Uninstalling the connector



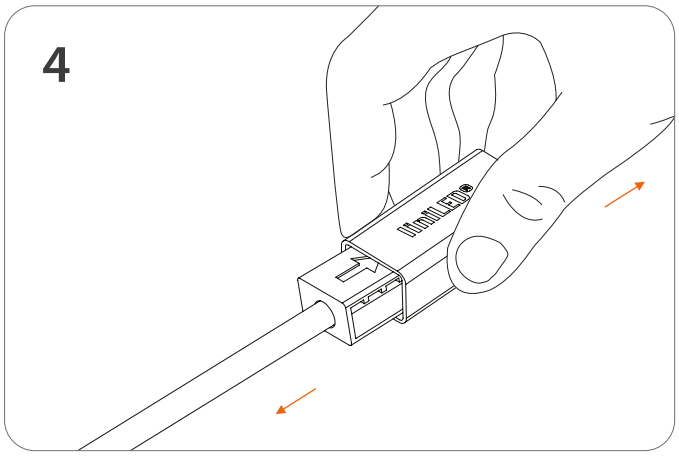
Firmly grab the outer shell and gently grab the liniLED® LED strip.



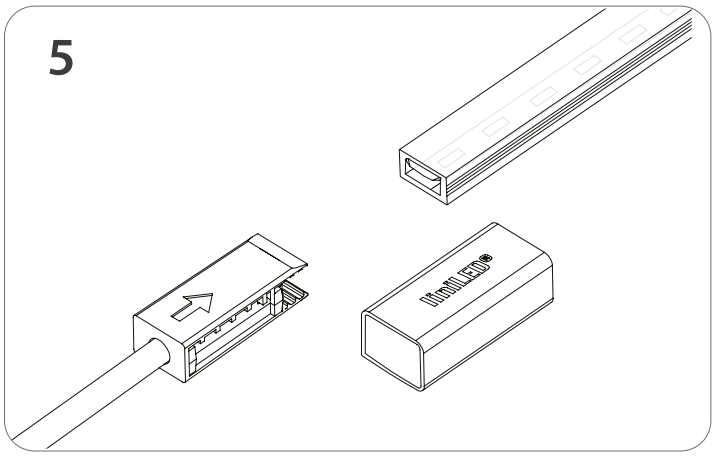
Gently wiggle the connector and pull in opposite direction.



The connector should look like this when it is removed.

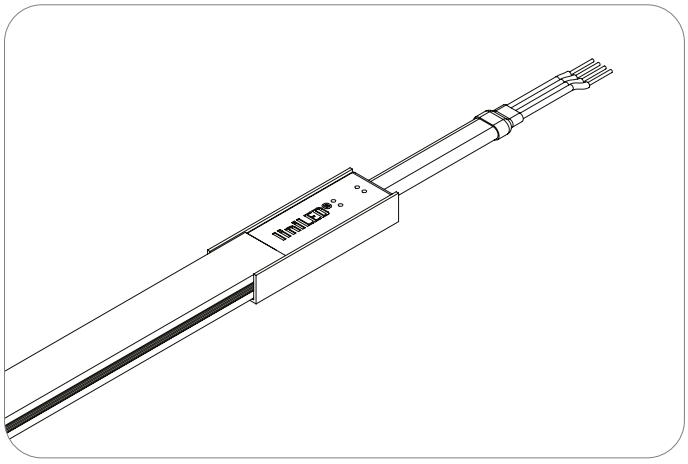


Firmly press the sides of the shell and pull gently while holding the cable to remove it.

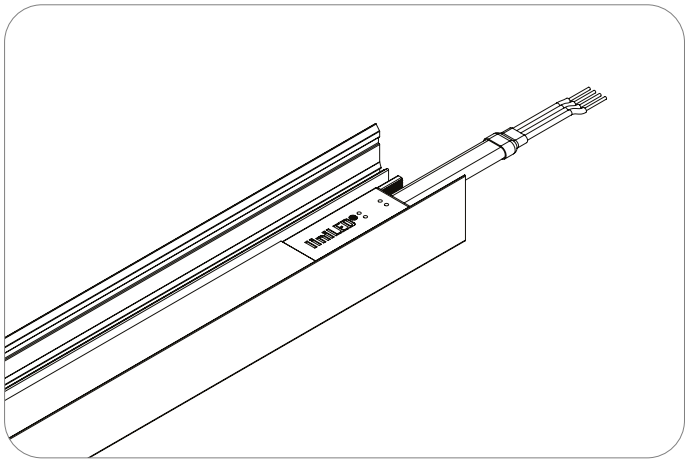


Article number	Description
11200	liniLED® Top Connector set 1 m
11201	liniLED® Top Connector set 5 m
11208	liniLED® Top Extension Cord

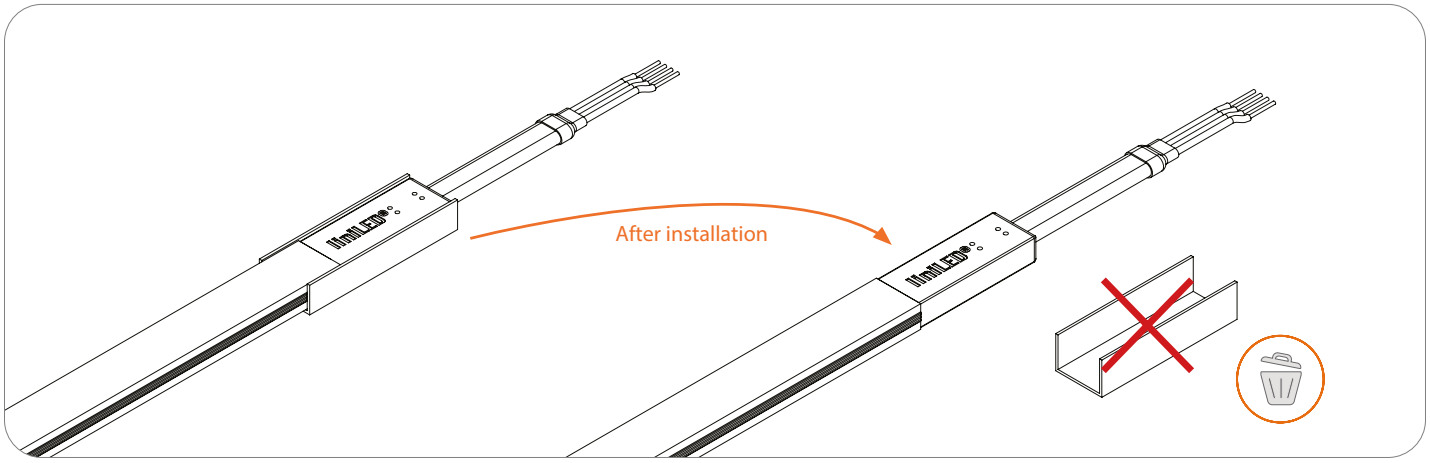
Welded connector



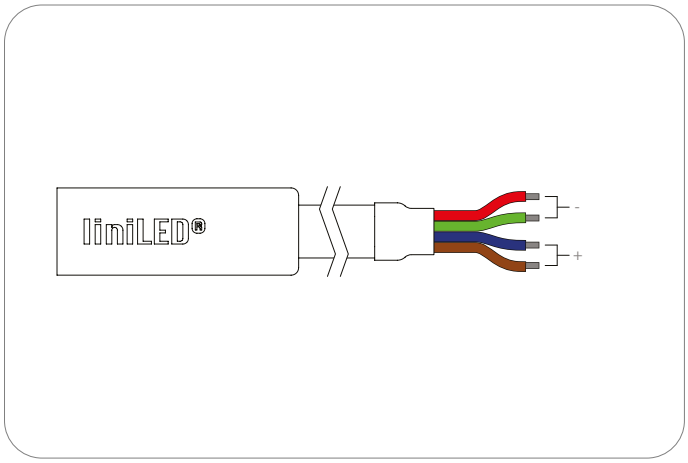
Option 1 Glued profile | Please do **not** try to remove the U-profile because this damages the connector.



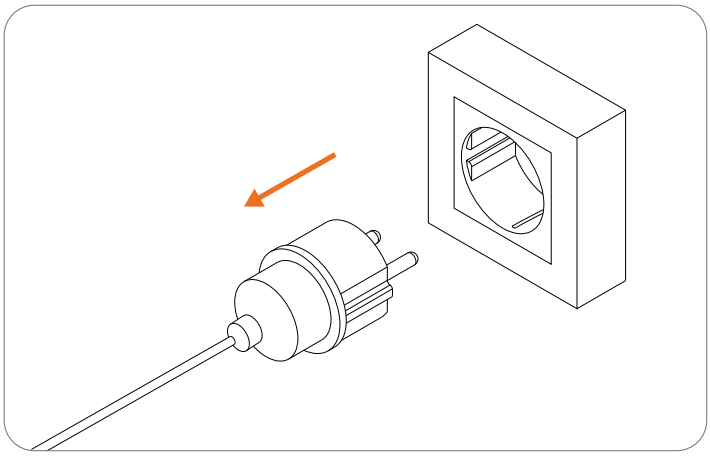
Option 2 Pre-installed | The liniLED® Welded connector and LED strip are pre-installed in a fixture/profile.



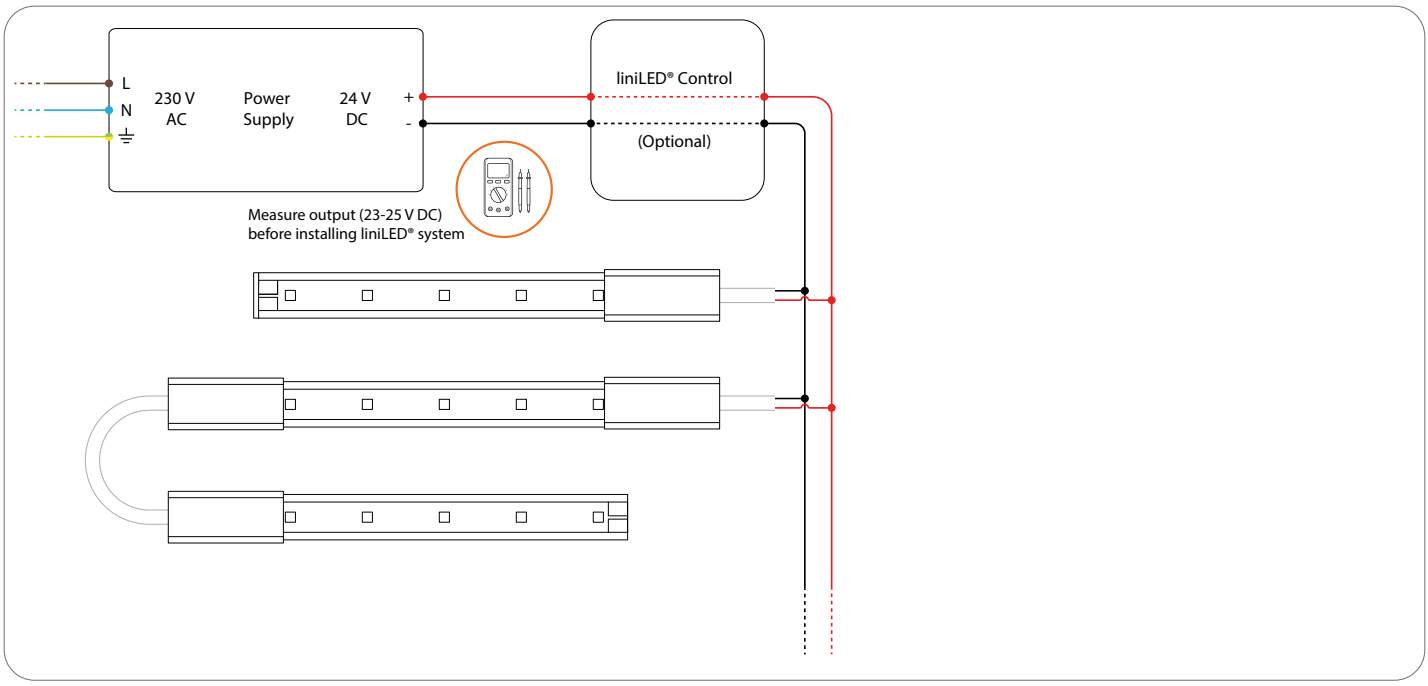
Option 3 Removable sleeve | The U-profile can be removed after installation, but this will void warranty.



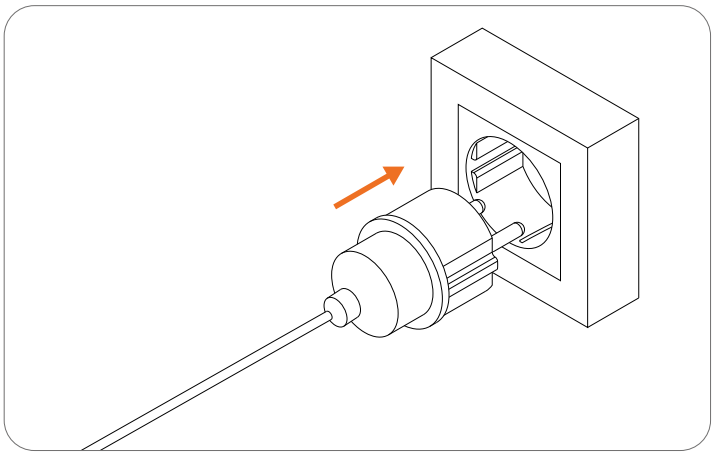
How to connect | Please use Blue and Brown for + and use Red and Green for -.



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



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.

Operating voltage of 24 V DC.

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 discolour fast when exposed to UV light.

Product can be cleaned with normal cleaning agents.

This product can be stored and used below 0 degrees Celsius. Verify the minimum storage and operating temperature in the datasheet or manual 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 of these elements see the liniLED® material sheet. 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 the liniLED® material sheet. Verify IP rating for proper use.

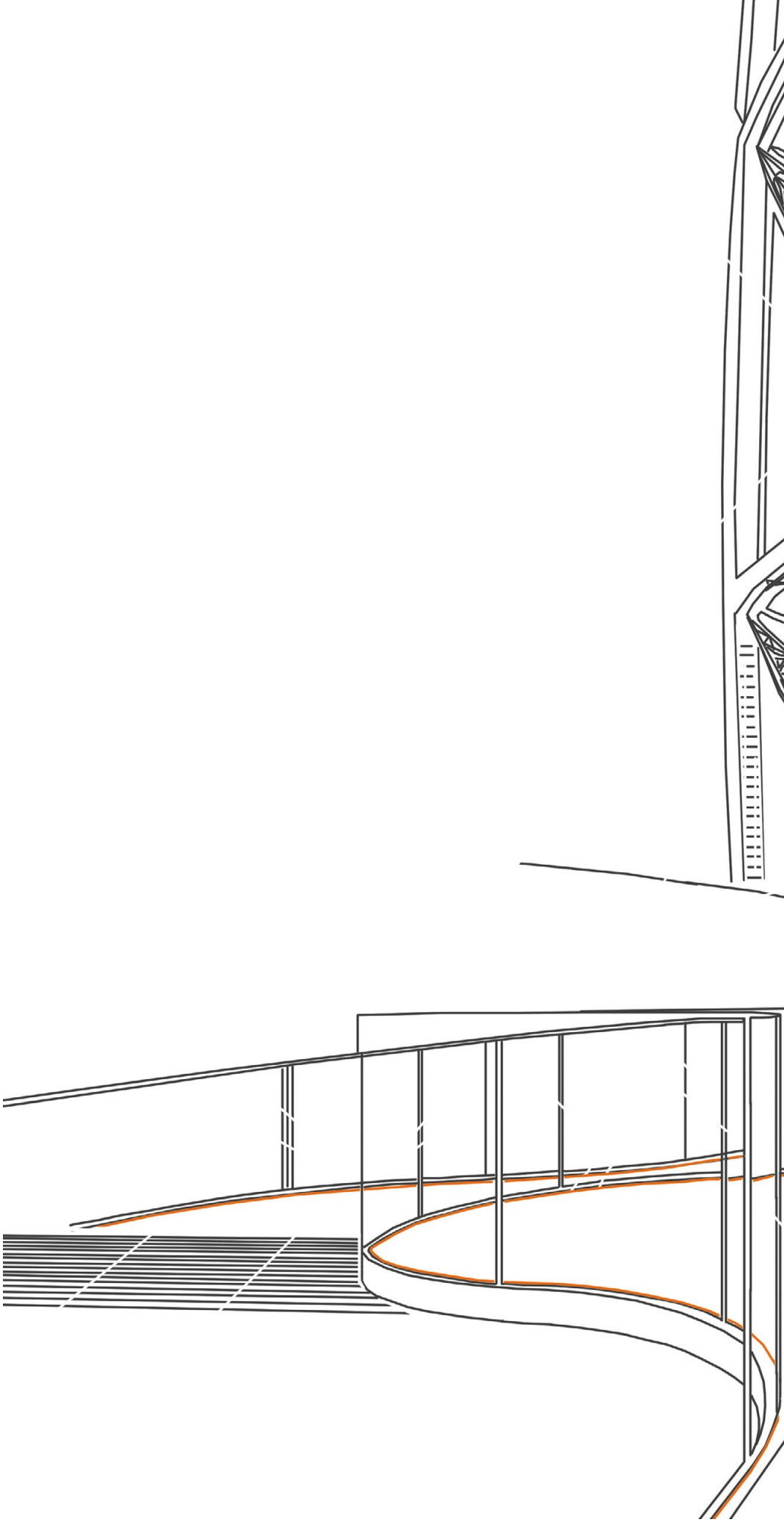
This product is available on request and can be applied submerged in swimming pools and their environment. Disinfectants will have no harmful effect on the product. For chemical specifications of these elements see the liniLED® material sheet. Verify IP rating for proper use.

The CRI value of this product is 80 or higher.

The binning tolerance of this product is 3 MacAdam.

This product needs to be disposed of separately from normal household waste so it can be recycled. Verify the IP rating for proper use.

System guarantee of 5 years when the complete system consist of liniLED® products with the 5 years system warranty logo.
Terms & conditions apply.

Disclaimer

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