

LED strip manual

liniLED® Diffuse G4



liniLED®

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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.

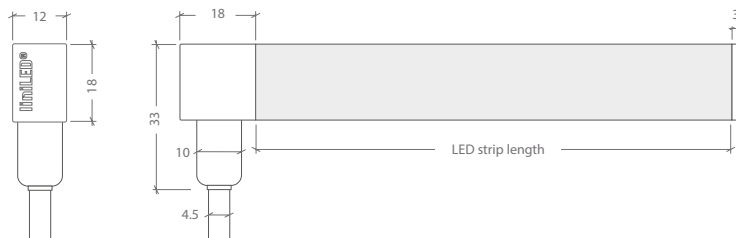
Technical specifications

	Top Diffuse 12 3000 K	Top Diffuse 18 3000 K	Side Diffuse 3000 K
Product code [m]	12401	12411	12421
Power (24 V DC)	7.0 W/m	7.0 W/m	7.0 W/m
Power (25 V DC)	7.3 W/m	7.3 W/m	7.3 W/m
CCT ¹	2896 K	6370 K	2799 K
CRI	>80	>80	>80
Luminous flux ¹	212 lm/m	231 lm/m	152 lm/m
Luminous efficiency ¹	30 lm/W	33 lm/W	22 lm/W
Spool length	Max. 50m		
Section length	50 mm		
LED type	3014		
Number of LEDs	6 per section/120 per metre		
Max. connection length	10 m		
Min. operating voltage	23 V DC		
Max. operating voltage	25 V DC		
Dimensions	12 x 18 mm	18 x 18 mm	12 x 18 mm
Dimmable	PWM dimming, 24 V DC Common Anode		
MacAdam Steps	3 steps		
Weight	240 gram per metre	340 gram per metre	240 gram per metre
Expected lifetime	L80/B10 > 60000 hrs @ Tc = 40°C		
Ingress protection	IP68+ > 50 m/IP69K		
Storage temperature	-30°C ... 55°C		
Operating temperature ²	-30°C ... 55°C		
Minimum bending radius	150 mm		

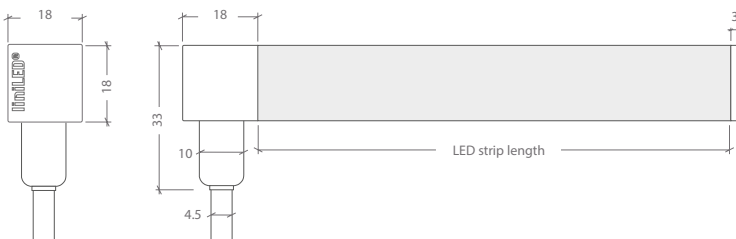
¹ Typical calculated values are given, which due to tolerances in components and production process can vary up to 10%.

² Max. connection length between -30°C and -20°C is 7 metres.

Product drawings



liniLED® Top Diffuse 12 & liniLED® Side Diffuse



liniLED® Top Diffuse 18

Maximum cable length

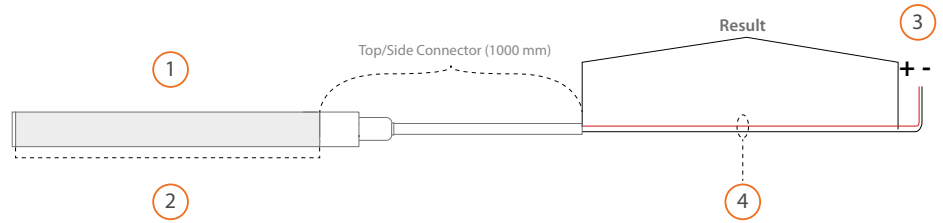
1 = Select colour temperature.

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.



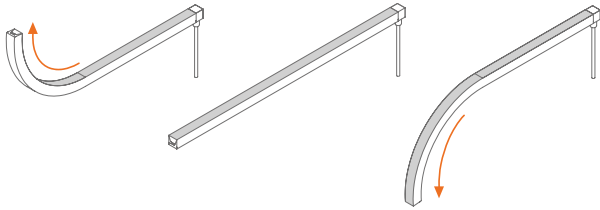
1. Colour temperature

3000K

2. LED strip length		1 m		2 m		5 m		10 m	
3. Voltage		24 VDC	25 VDC	24 VDC	25 VDC	24 VDC	25 VDC	24 VDC	25 VDC
4. Cable cross section	0.50 mm ² - 0.035 Ω/m	42.9 m	83.7 m	20.8 m	41.2 m	7.5 m	15.7 m	3.1 m	7.2 m
	0.75 mm ² - 0.023 Ω/m	64.6 m	125.9 m	31.3 m	62.0 m	11.3 m	23.6 m	4.7 m	10.8 m
	1.00 mm ² - 0.018 Ω/m	85.9 m	167.4 m	41.7 m	82.4 m	15.1 m	31.4 m	6.2 m	14.4 m
	1.50 mm ² - 0.012 Ω/m	129.3 m	251.8 m	62.7 m	124.0 m	22.7 m	47.2 m	9.4 m	21.7 m
	2.50 mm ² - 0.007 Ω/m	215.2 m	419.2 m	104.4 m	206.3 m	37.9 m	78.6 m	15.7 m	36.1 m

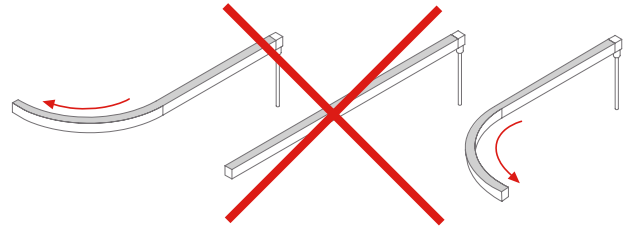
⚠ **Note:** Calculations are based on a standard connector with 1 metre cable (0.5 mm²).

Top



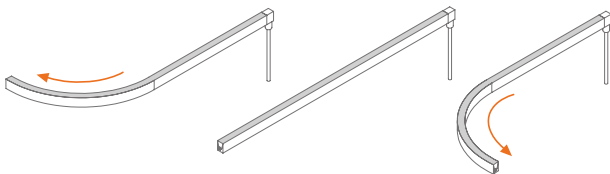
Solely bend the liniLED® Top Diffuse LED strip in up- and downward direction when the light surface is facing upwards.

Top



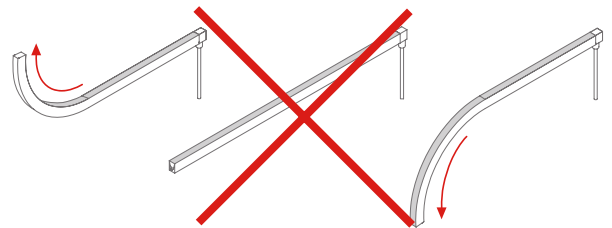
⚠ Do not bend the liniLED® Top Diffuse LED strip in sideward direction when the light surface is facing upwards.

Side



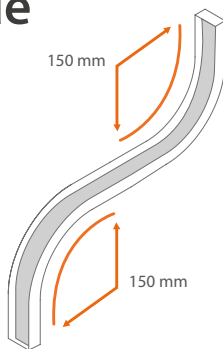
Solely bend the liniLED® Side Diffuse LED strip in sideward direction when the light surface is facing upwards.

Side



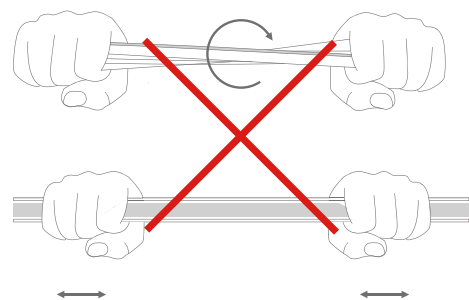
⚠ Do not bend the liniLED® Side Diffuse LED strip in up- and downward direction when the light surface is facing upwards.

Top/Side



The minimum bending radius of the liniLED® Diffuse LED strips are 150 mm.

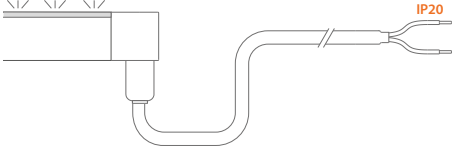
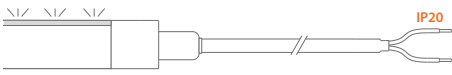
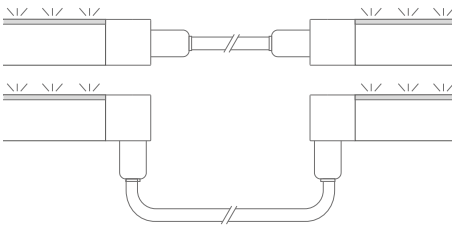
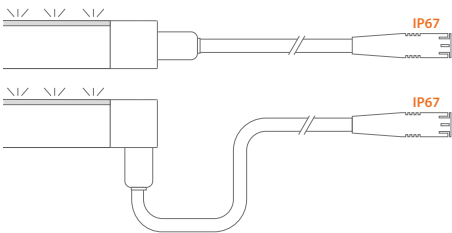
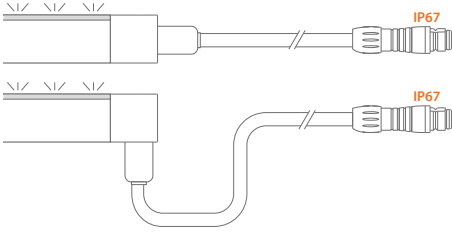

Top/Side



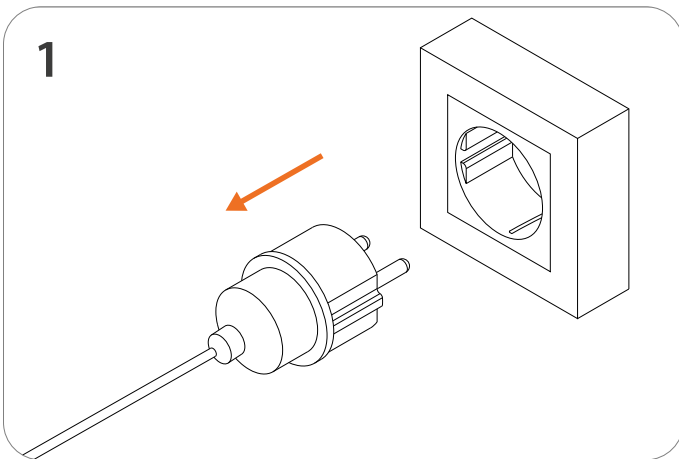
⚠ Do not twist, stretch or compress the liniLED® Diffuse LED strips.

Connectors

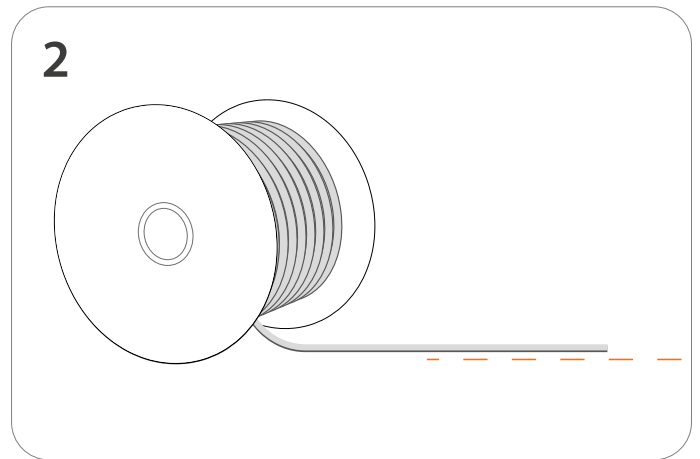
The liniLED® Diffuse LED strips come with a pre-assembled connector, available in different types. Extending LED strip can be achieved with the liniLED® Diffuse Extension Cord. Below is an overview of the available types with corresponding cable lengths and article numbers.

Product drawings (side view)	Product code	Cable length
	Diffuse Connector 90° Angle	
	11260 liniLED® Diffuse Connector 90° Angle 12 1 m	1000 mm
	11261 liniLED® Diffuse Connector 90° Angle 12 5 m	5000 mm
	11245 liniLED® Diffuse Connector 90° Angle 18 1 m	1000 mm
	11246 liniLED® Diffuse Connector 90° Angle 18 5 m	5000 mm
	Diffuse Connector Straight	
	11270 liniLED® Diffuse Connector Straight 12 1 m	1000 mm
	11271 liniLED® Diffuse Connector Straight 12 5 m	5000 mm
	11250 liniLED® Diffuse Connector Straight 18 5 m	1000 mm
	11251 liniLED® Diffuse Connector Straight 18 5 m	5000 mm
	Diffuse Extension Cord	
	11277 liniLED® Diffuse Extension Cord Angle 12	300 mm
	11279 liniLED® Diffuse Extension Cord Straight 12	300 mm
	11276 liniLED® Diffuse Extension Cord Angle 18	300 mm
	11278 liniLED® Diffuse Extension Cord Straight 18	300 mm
	Diffuse Connector Male	
	11284 liniLED® Diffuse Connector Angle Male 12	300 mm
	11286 liniLED® Diffuse Connector Straight Male 12	300 mm
	11280 liniLED® Diffuse Connector Angle Male 18	300 mm
	11282 liniLED® Diffuse Connector Straight Male 18	300 mm
	Diffuse Connector Female	
	11285 liniLED® Diffuse Connector Angle Female 12	300 mm
	11287 liniLED® Diffuse Connector Straight Female 12	300 mm
	11281 liniLED® Diffuse Connector Angle Female 18	300 mm
	11283 liniLED® Diffuse Connector Straight Female 18	300 mm
	Connection Cable Female	
11274 liniLED® Connection Cable Female 5 m	5000 mm	

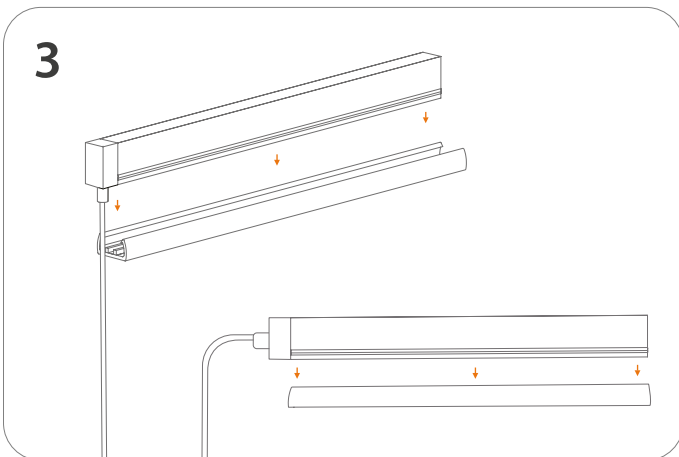
Installation



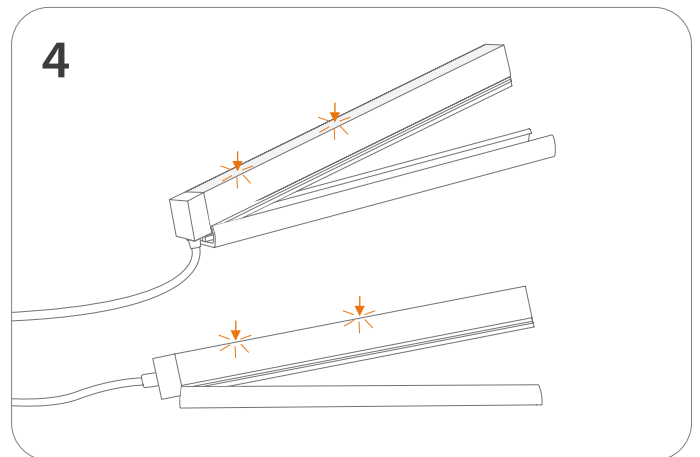
⚠ Turn off the power. Make sure the wires are **not** under electric current.



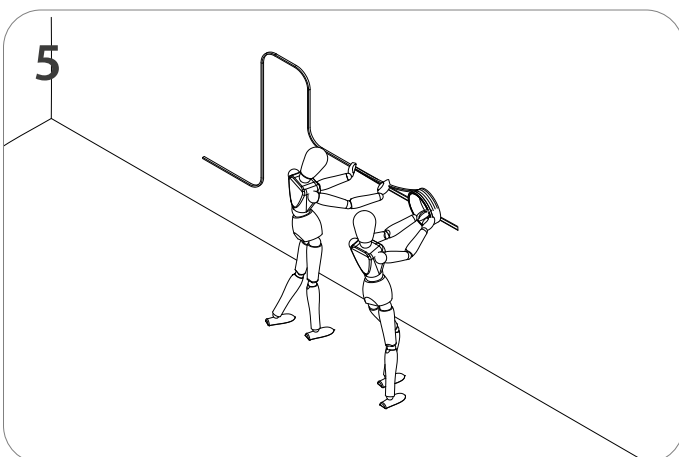
Unspool the LED strip on a horizontal surface.



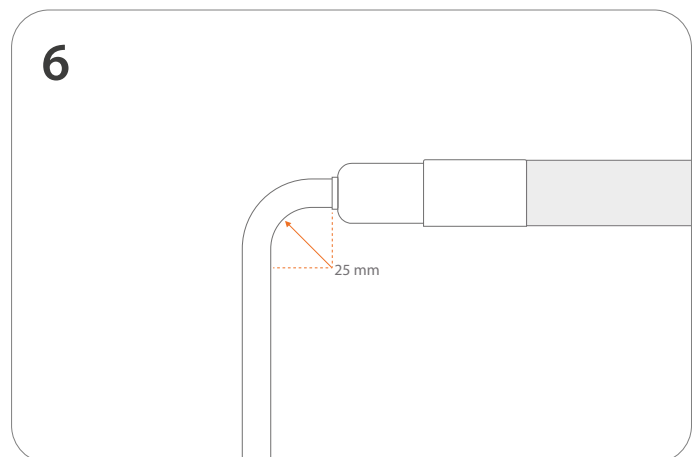
Make sure the liniLED® Diffuse LED strip and the U-Profile are aligned.



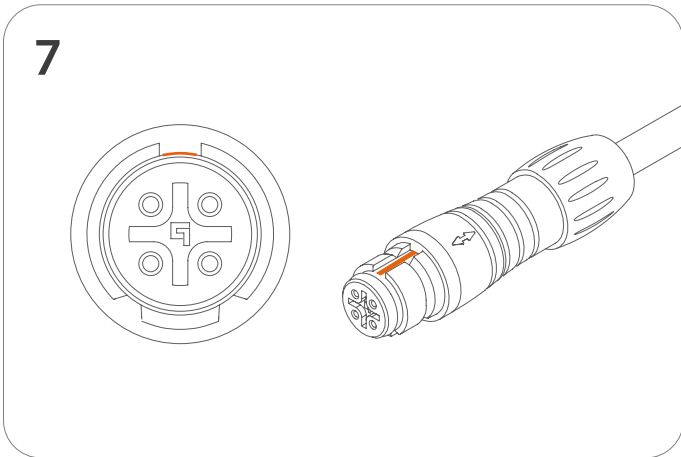
Gently push the liniLED® Diffuse LED strip into the U-Profile.



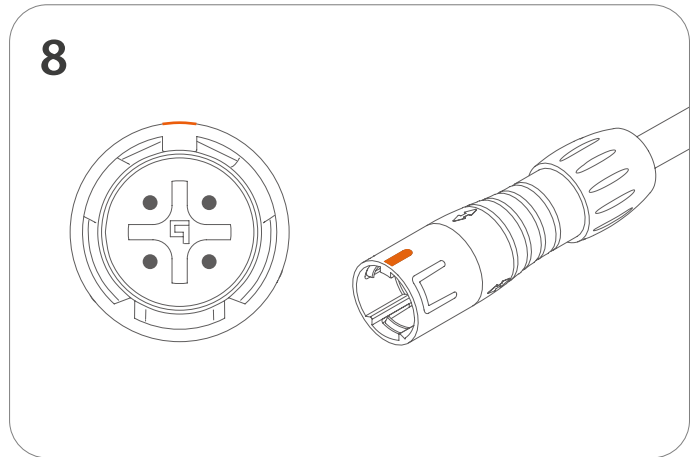
Long lengths should be installed by two installers to prevent the LED strip from twisting or bending. Keep in mind the minimum bending radius of 150 mm.



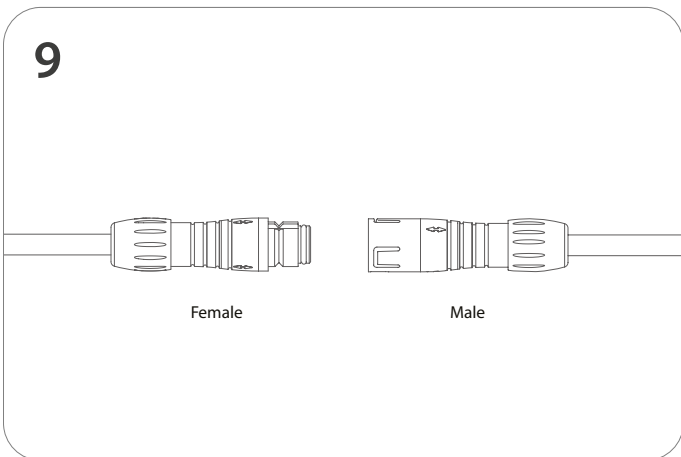
Minimum bending radius of the cable is 25 mm.



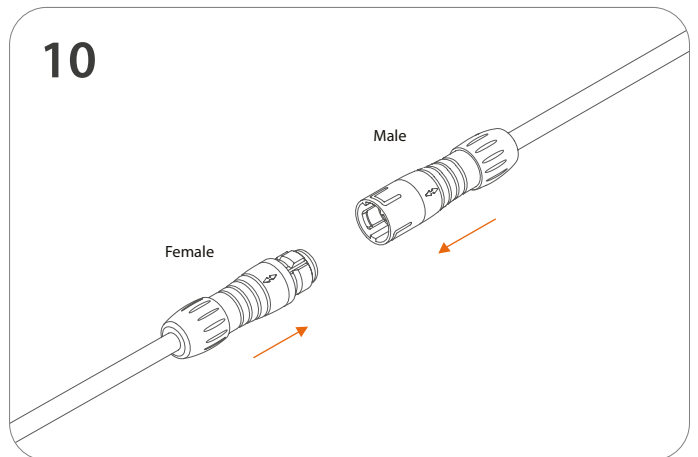
⚠ **Optional** | Female connector front and isometric view, notice the white marker on top (highlighted in orange).



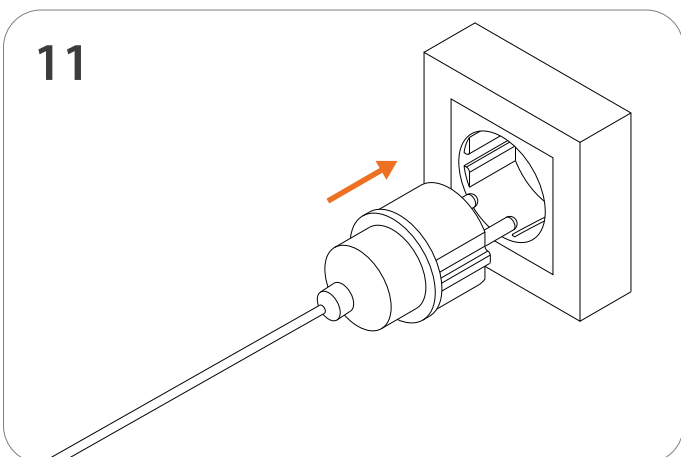
⚠ **Optional** | Male connector front and isometric view, notice the white marker on top (highlighted in orange).



⚠ **Optional** | Align the white marker of the Female and Male connector.

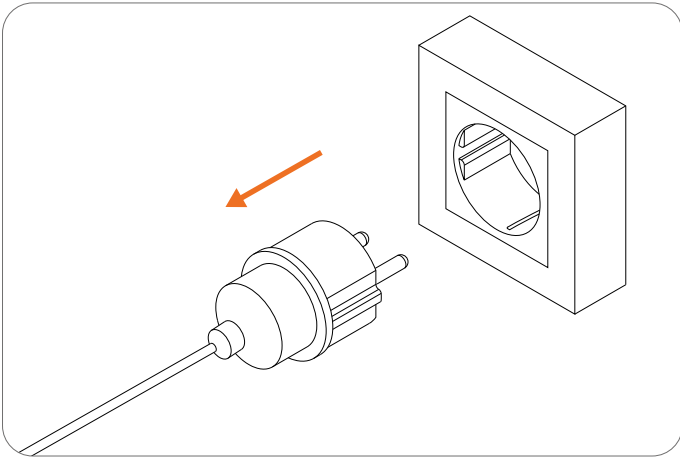


⚠ **Optional** | Snap the connector while keeping the white marker aligned.

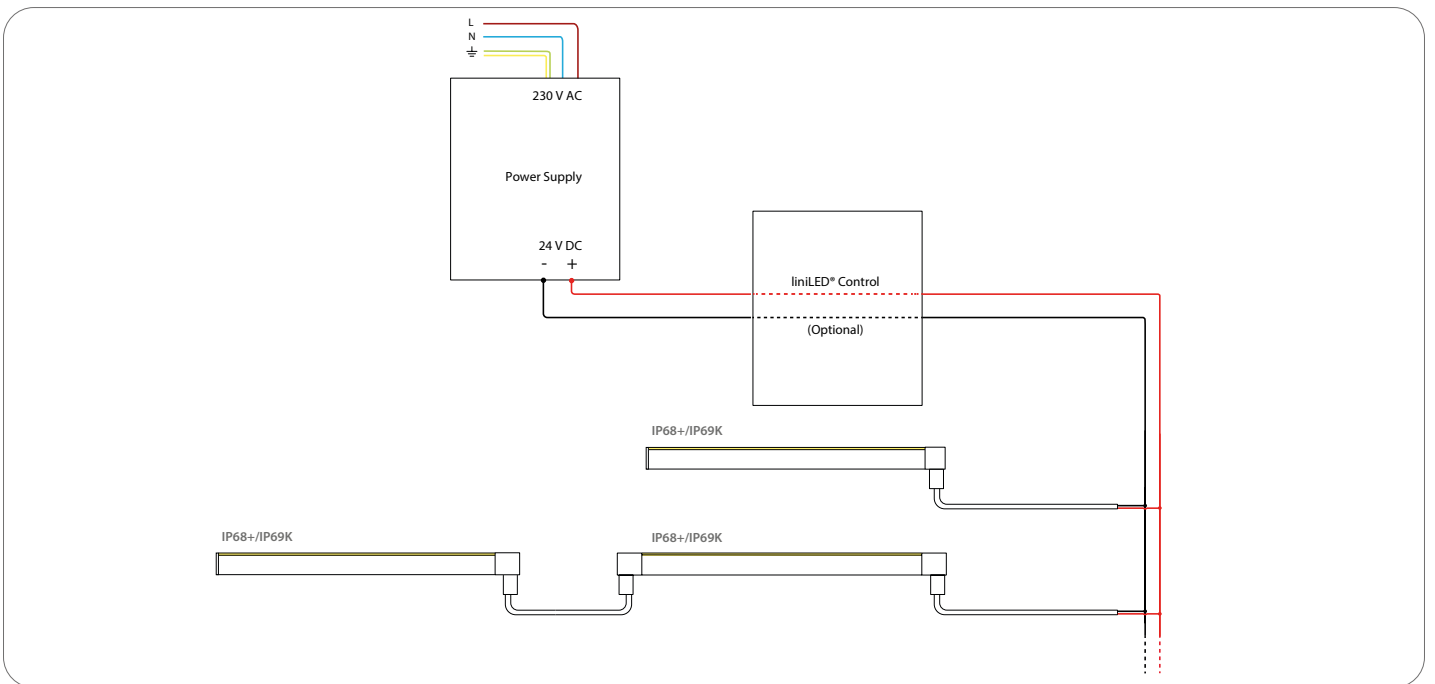


Turn the power ON.

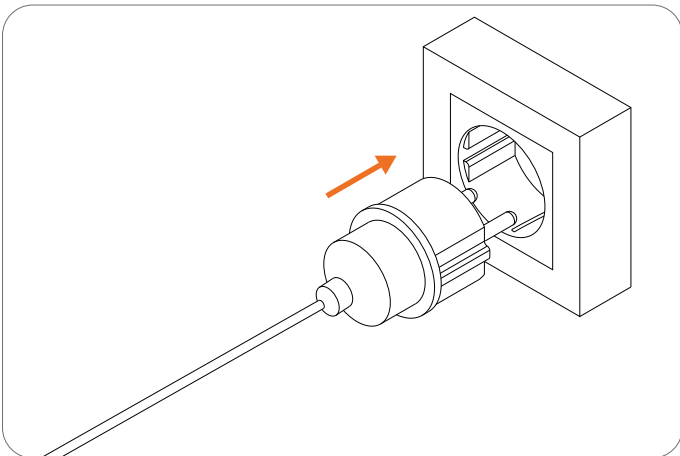
Power and connection diagram



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



Connect the LED strip as indicated in the figure above.



⚠ 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).



Dust-tight, no ingress of dust. Protected against the effects of continuous immersion in water (immersion in water at a maximum depth of 50 metres). Only in combination with the liniLED® Mirror Welded Connector.



Dust-tight, no ingress of dust. Protected against close-range high pressure, high temperature spray downs. Only in combination with the liniLED® Mirror welded connector.



Protected against impact energy of 5 joules.



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.



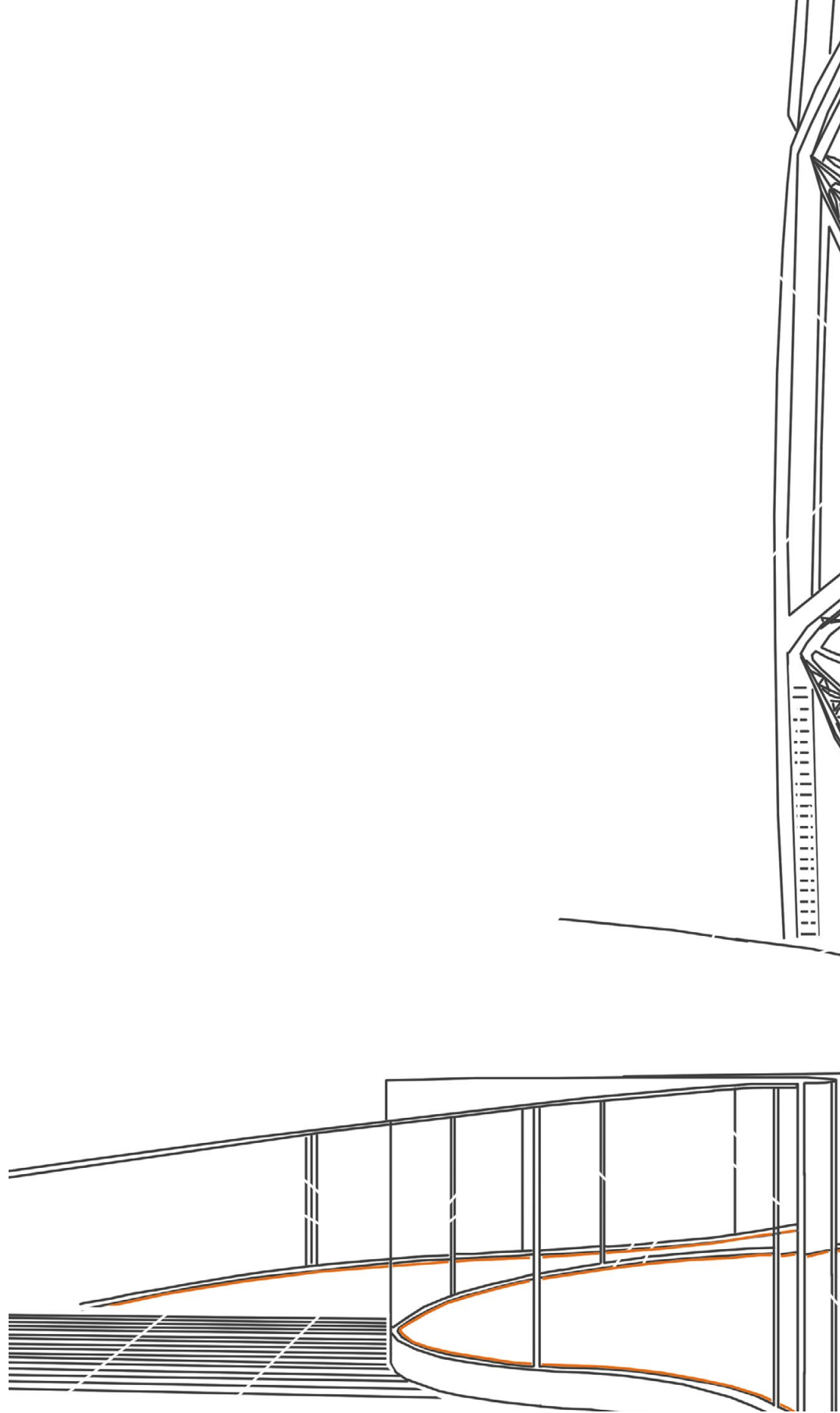
White colour consistency up to 2 SDCM ellipse over an entire single strip length. LEDs used are single BIN 3 SDCM ellipse, but their careful combination in a LED strip during the production process, results in a mixed light through a diffusive material which is within a 2 SDCM ellipse (probability >90%). Due to variability this is not legally binding. The guaranteed colour consistency can be found in the technical specifications.



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.



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