

LED strip manual
liniLED® PCB Photon



liniLED®

LED strip PCB Photon

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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.

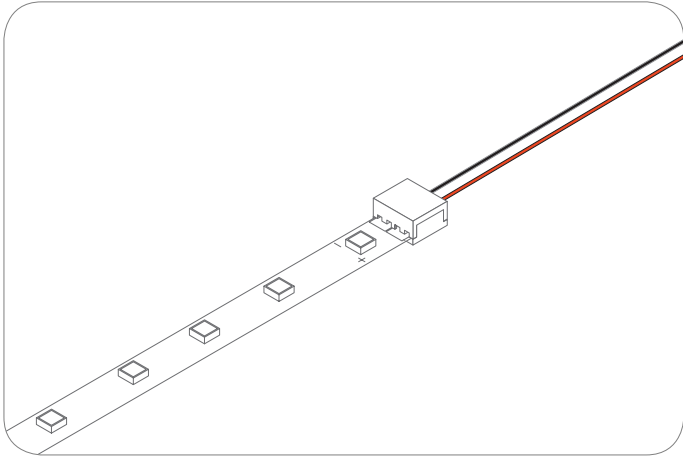
Warranty

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

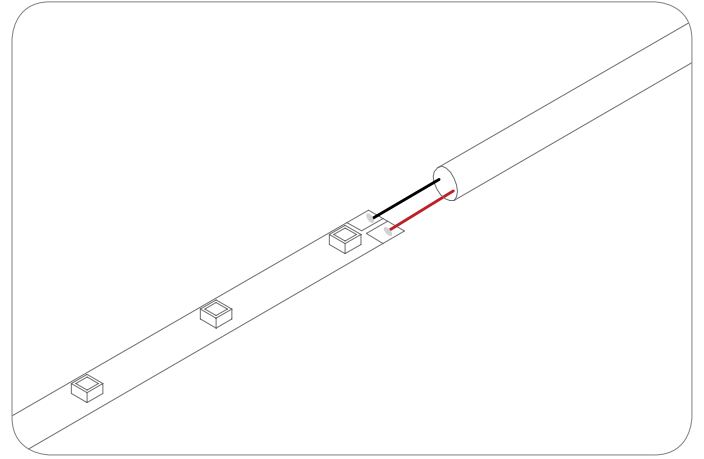
- The installation guide has not been consulted (installation mistake).
- The installation is not done by a certified installer.
- Local rules and guidelines are not respected.
- The invoice cannot be shown and/or has been altered.
- Damage is caused by negligence, abnormal use or improper handling,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

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 for the liniLED® PCB LED strip includes an IP00 connector.

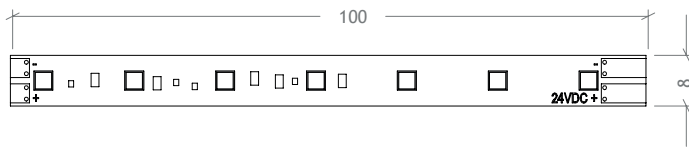


Indoor environment | (IP00) | liniLED® PCB Connector Set
Product code: 11808

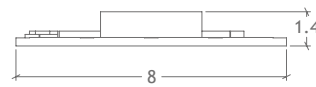


Indoor environment | (IP00)
Solder

Product dimensions



LED strip top view



LED strip front view

Product information

The liniLED® LED strip PCB Photon (IP00) is a high quality, flexible LED strip with an outstanding efficiency. Thanks to the small dimensions, the PCB LED strip is ideal to use in small spaces (indoor use only!). With 3M double sided tape on the back, the PCB LED strip is easy to mount. The liniLED® LED strip PCB Photon serie is available in various white colours and lumen (1200-4000).

* Connect the PCB LED strips with the PCB Connector Set and the PCB Inline Connector. See datasheet for more information.

Product specifications

	Colour	LED/m	V DC	W/m	lm/m	Temp °C	Max. Length	B50/L70
Photon 1200	2000K	70	24	10.6	1002	-30...55 ¹	9 m	> 50.000 h
	2400K	70	24	10.6	1170	-30...55 ¹	9 m	> 50.000 h
	2700K	70	24	8.9	1208	-30...55 ¹	9 m	> 50.000 h
	3000K	70	24	8.9	1230	-30...55 ¹	9 m	> 50.000 h
	4000K	70	24	8.1	1221	-30...55 ¹	9 m	> 50.000 h
	6500K	70	24	8.1	1223	-30...55 ¹	9 m	> 50.000 h
Photon 2000	2000K	70	24	17.9	1536	-30...55 ¹	4.5 m	> 50.000 h
	2400K	70	24	17.9	1709	-30...55 ¹	4.5 m	> 50.000 h
	2700K	70	24	15	1742	-30...55 ¹	4.5 m	> 50.000 h
	3000K	70	24	15	1798	-30...55 ¹	4.5 m	> 50.000 h
	4000K	70	24	13.6	1831	-30...55 ¹	4.5 m	> 50.000 h
	6500K	70	24	13.6	1813	-30...55 ¹	4.5 m	> 50.000 h
Photon 3000	2000K	70	24	28.9	2292	-30...55 ¹	3 m	> 50.000 h
	2400K	70	24	28.9	2545	-30...55 ¹	3 m	> 50.000 h
	2700K	70	24	23.7	2631	-30...55 ¹	3 m	> 50.000 h
	3000K	70	24	23.7	2785	-30...55 ¹	3 m	> 50.000 h
	4000K	70	24	21.8	2663	-30...55 ¹	3 m	> 50.000 h
	6500K	70	24	21.8	2614	-30...55 ¹	3 m	> 50.000 h
Photon 4000	2000K	70	24	28.9	3300	-30...55 ¹	3 m	> 50.000 h
	2400K	70	24	28.9	3401	-30...55 ¹	3 m	> 50.000 h
	2700K	70	24	28.9	3415	-30...55 ¹	3 m	> 50.000 h
	3000K	70	24	28.9	3404	-30...55 ¹	3 m	> 50.000 h

Cable Selection Photon 1200

Cable X information	LED strip	Max. cable length 2000, 2400K		Max. cable length 2700, 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	27.9 m	54.8 m	33.5 m	65.5 m	36.9 m	72.1 m
	2 m	13.3 m	26.7 m	16.1 m	32.1 m	17.8 m	35.4 m
	5 m	4.5 m	9.9 m	5.6 m	12.0 m	6.3 m	13.4 m
	9 m	1.9 m	4.9 m	2.5 m	6.1 m	2.9 m	6.8 m
liniLED® cable (2 x 0.75 mm ²) 0.023 Ω/m	1 m	42.0 m	82.5 m	50.4 m	98.6 m	55.6 m	108.5 m
	2 m	20.0 m	40.2 m	24.2 m	48.3 m	26.8 m	53.3 m
	5 m	6.8 m	14.9 m	8.5 m	18.1 m	9.5 m	20.1 m
	9 m	2.9 m	7.4 m	3.8 m	9.2 m	4.4 m	10.3 m
liniLED® cable (2 x 1.00 mm ²) 0.018 Ω/m	1 m	55.9 m	109.7 m	67.0 m	131.1 m	73.9 m	144.3 m
	2 m	26.6 m	53.5 m	32.2 m	64.2 m	35.6 m	70.8 m
	5 m	9.1 m	19.8 m	11.3 m	24.1 m	12.7 m	26.8 m
	9 m	3.9 m	9.9 m	5.1 m	12.2 m	5.9 m	13.7 m
liniLED® cable (2 x 1.50 mm ²) 0.012 Ω/m	1 m	84.0 m	165.0 m	100.9 m	197.2 m	111.2 m	217.1 m
	2 m	40.1 m	80.5 m	48.5 m	96.7 m	53.6 m	106.6 m
	5 m	13.7 m	29.9 m	17.0 m	36.3 m	19.1 m	40.3 m
	9 m	5.9 m	14.9 m	7.7 m	18.4 m	8.9 m	20.6 m
liniLED® cable (2 x 2.50 mm ²) 0.007 Ω/m	1 m	139.9 m	274.6 m	167.9 m	328.3 m	185.1 m	361.4 m
	2 m	66.7 m	134.1 m	80.7 m	160.9 m	89.3 m	177.4 m
	5 m	22.8 m	49.7 m	28.4 m	60.5 m	31.8 m	67.1 m
	9 m	9.8 m	24.8 m	12.9 m	30.7 m	14.8 m	34.4 m

Cable Selection Photon 2000

Cable X information	LED strip	Max. cable length 2000, 2400K		Max. cable length 2700, 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	16.0 m	32.0 m	19.4 m	38.4 m	21.5 m	42.5 m
	2 m	7.4 m	15.3 m	9.0 m	18.6 m	10.1 m	20.6 m
	3 m	4.5 m	9.8 m	5.6 m	11.9 m	6.3 m	13.3 m
	4.5 m	2.6 m	6.1 m	3.3 m	7.5 m	3.8 m	8.4 m
liniLED® cable (2 x 0.75 mm ²) 0.023 Ω/m	1 m	24.1 m	48.1 m	29.1 m	57.7 m	32.3 m	63.9 m
	2 m	11.1 m	23.1 m	13.6 m	27.9 m	15.2 m	31.0 m
	3 m	6.7 m	14.7 m	8.4 m	18.0 m	9.5 m	20.0 m
	4.5 m	3.9 m	9.2 m	5.0 m	11.3 m	5.7 m	12.7 m
liniLED® cable (2 x 1.00 mm ²) 0.018 Ω/m	1 m	32.1 m	63.9 m	38.8 m	76.8 m	43.0 m	84.9 m
	2 m	14.7 m	30.7 m	18.1 m	37.1 m	20.2 m	41.2 m
	3 m	9.0 m	19.6 m	11.2 m	23.9 m	12.6 m	26.6 m
	4.5 m	5.1 m	12.2 m	6.6 m	15.1 m	7.6 m	16.9 m
liniLED® cable (2 x 1.50 mm ²) 0.012 Ω/m	1 m	48.2 m	96.1 m	58.3 m	115.5 m	64.7 m	127.8 m
	2 m	22.2 m	46.1 m	27.2 m	55.8 m	30.4 m	62.0 m
	3 m	13.5 m	29.5 m	16.9 m	35.9 m	19.0 m	40.0 m
	4.5 m	7.7 m	18.4 m	10.0 m	22.7 m	11.4 m	25.4 m
liniLED® cable (2 x 2.50 mm ²) 0.007 Ω/m	1 m	80.3 m	160.0 m	97.0 m	192.2 m	107.7 m	212.6 m
	2 m	36.9 m	76.8 m	45.3 m	92.9 m	50.6 m	103.1 m
	3 m	22.5 m	49.1 m	28.1 m	59.8 m	31.6 m	66.6 m
	4.5 m	12.8 m	30.6 m	16.6 m	37.7 m	18.9 m	42.3 m

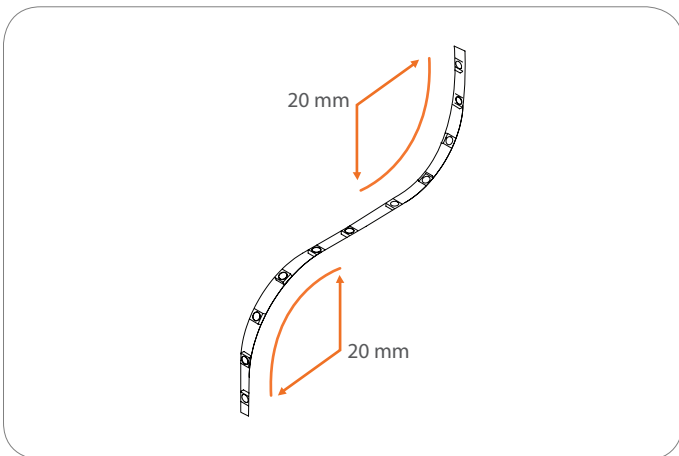
Cable Selection Photon 3000

Cable X information	LED strip	Max. cable length 2000, 2400K		Max. cable length 2700, 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	9.4 m	19.3 m	11.8 m	23.8 m	12.9 m	26.0 m
	2 m	4.1 m	9.0 m	5.3 m	11.3 m	5.8 m	12.4 m
	3 m	2.3 m	5.6 m	3.1 m	7.1 m	3.5 m	7.8 m
liniLED® cable (2 x 0.75 mm ²) 0.023 Ω/m	1 m	14.2 m	29.0 m	17.7 m	35.8 m	19.5 m	39.1 m
	2 m	6.1 m	13.6 m	7.9 m	17.0 m	8.8 m	18.6 m
	3 m	3.4 m	8.4 m	4.6 m	10.7 m	5.2 m	11.8 m
liniLED® cable (2 x 1.00 mm ²) 0.018 Ω/m	1 m	18.9 m	38.6 m	23.6 m	47.6 m	25.9 m	52.0 m
	2 m	8.2 m	18.0 m	10.5 m	22.5 m	11.6 m	24.7 m
	3 m	4.6 m	11.2 m	6.1 m	14.2 m	6.9 m	15.6 m
liniLED® cable (2 x 1.50 mm ²) 0.012 Ω/m	1 m	28.4 m	58.1 m	35.5 m	71.7 m	38.9 m	78.3 m
	2 m	12.3 m	27.1 m	15.8 m	33.9 m	17.5 m	37.2 m
	3 m	6.9 m	16.8 m	9.3 m	21.3 m	10.4 m	23.5 m
liniLED® cable (2 x 2.50 mm ²) 0.007 Ω/m	1 m	47.3 m	96.7 m	59.0 m	119.3 m	64.8 m	130.2 m
	2 m	20.4 m	45.1 m	26.3 m	56.4 m	29.2 m	61.9 m
	3 m	11.5 m	27.9 m	15.4 m	35.5 m	17.3 m	39.1 m

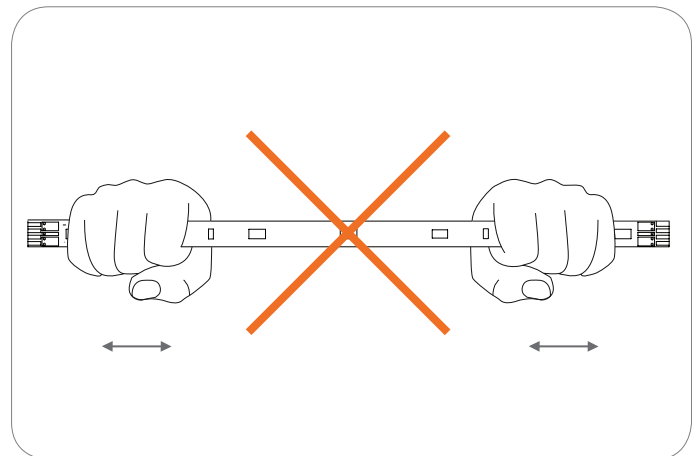
Cable Selection Photon 4000

Cable X information	LED strip	Max. cable length 2700 t/m 6500K	
		@ 24 V DC	@ 25V DC
liniLED® cable (2 x 0.50 mm ²) 0.035 Ω/m	1 m	9.4 m	19.3 m
	2 m	5.9 m	12.4 m
	2.1 m	3.8 m	8.5 m
liniLED® cable (2 x 0.75 mm ²) 0.023 Ω/m	1 m	14.2 m	29.0 m
	2 m	8.8 m	18.7 m
	2.1 m	5.8 m	12.8 m
liniLED® cable (2 x 1.00 mm ²) 0.018 Ω/m	1 m	18.9 m	38.6 m
	2 m	11.7 m	24.9 m
	2.1 m	7.6 m	17.0 m
liniLED® cable (2 x 1.50 mm ²) 0.012 Ω/m	1 m	28.4 m	58.1 m
	2 m	17.6 m	37.4 m
	2.1 m	11.5 m	25.6 m
liniLED® cable (2 x 2.50 mm ²) 0.007 Ω/m	1 m	47.3 m	96.7 m
	2 m	29.4 m	62.3 m
	2.1 m	19.1 m	42.7 m

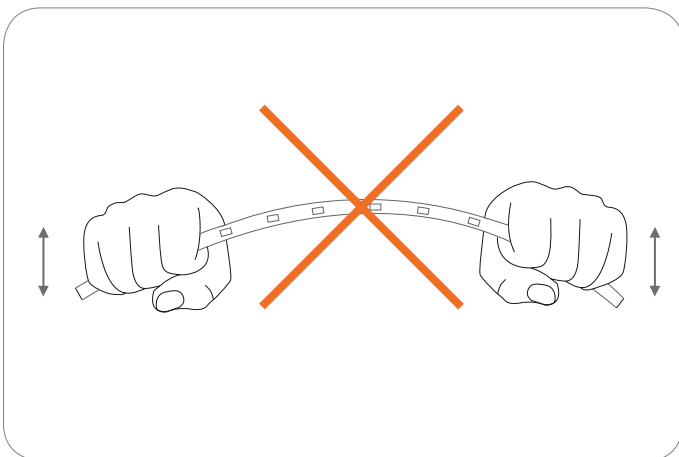
Product care and handling



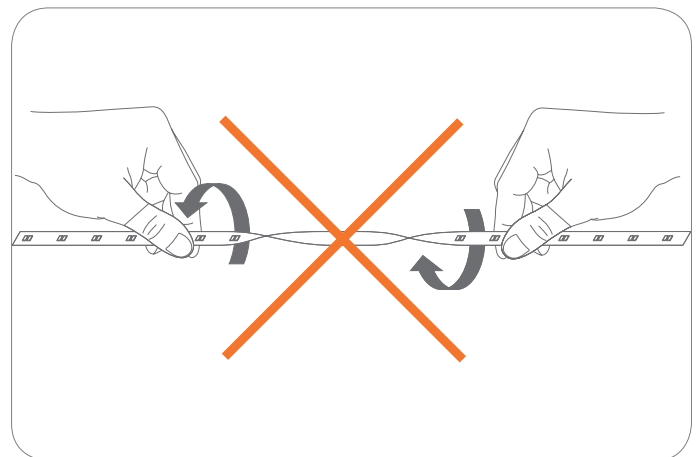
Maximum bending radius is 20 mm. Solely bend up or downward.



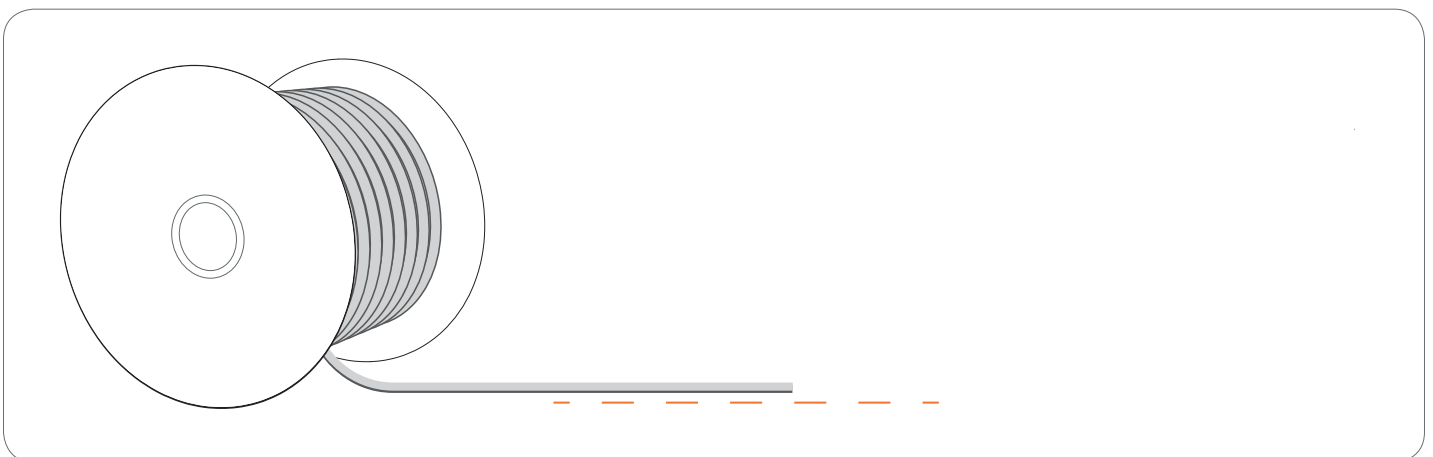
⚠ Do not compress or stretch the LED strip.



⚠ Do not bend the LED strip sideways.

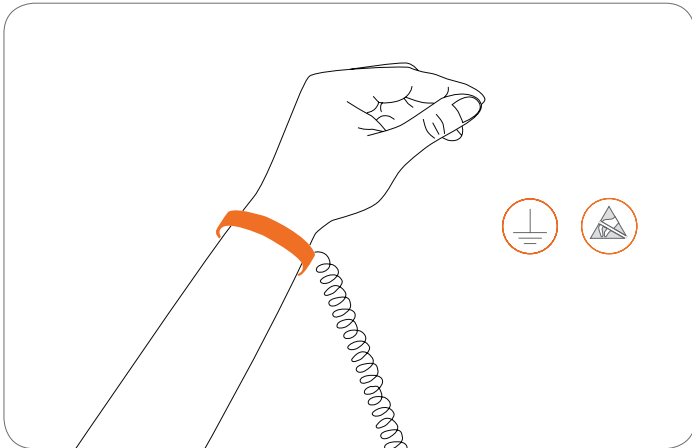


⚠ Do not twist the LED strip.

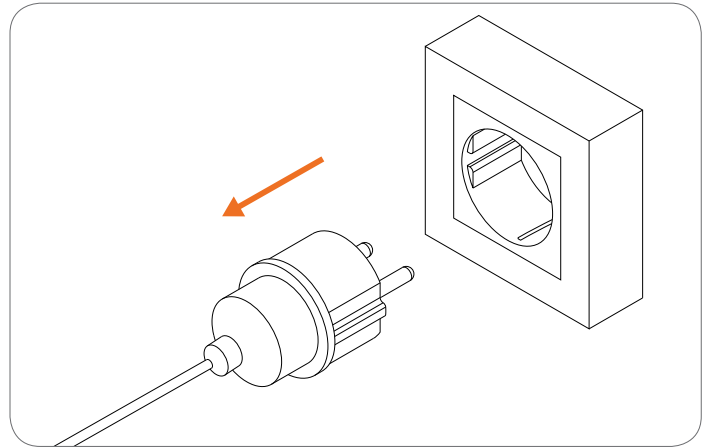


The LED strip has to be unreeled on a horizontal surface at the time of installation. Do not unreele the spool of LED strip before installation.

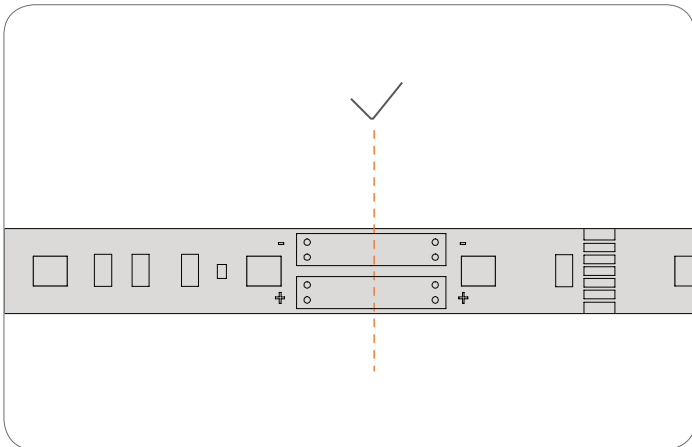
Cutting instructions



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

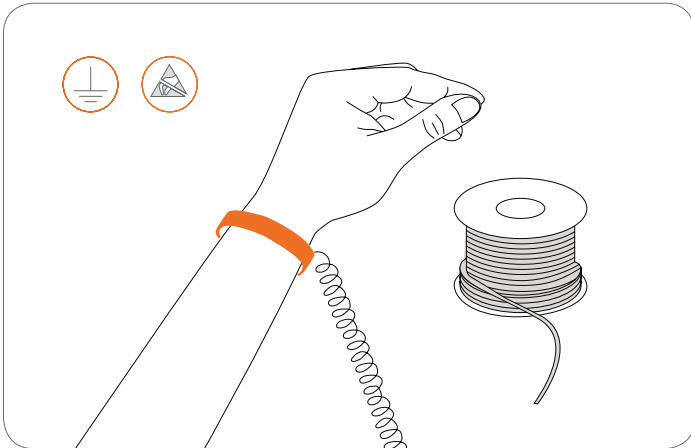


Turn off the power before cutting the LED strip.

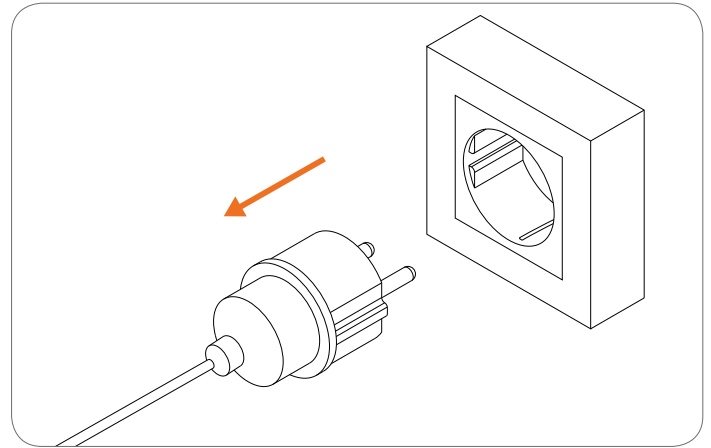


Top view | Only cut on the dotted lines to prevent damaging the LED strip.

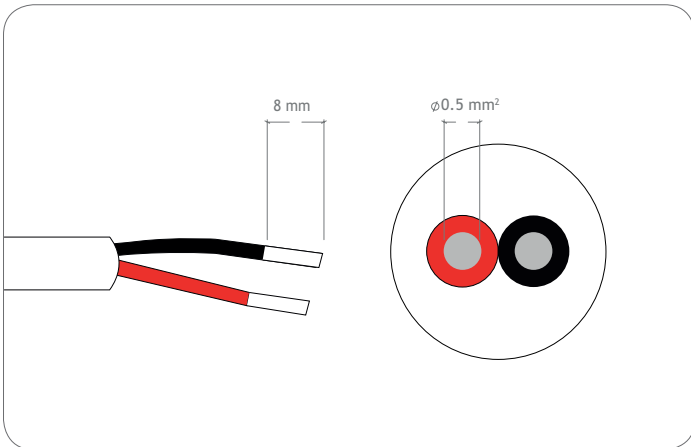
Solder



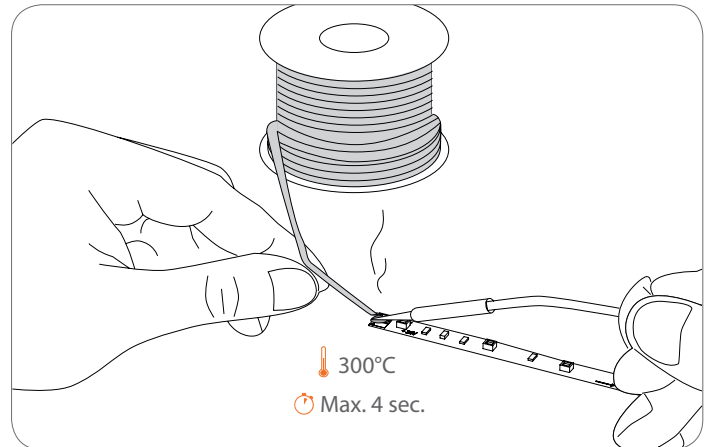
⚠ Work in an ESD protected environment. Make use of an anti-static strap and use lead-free solder.



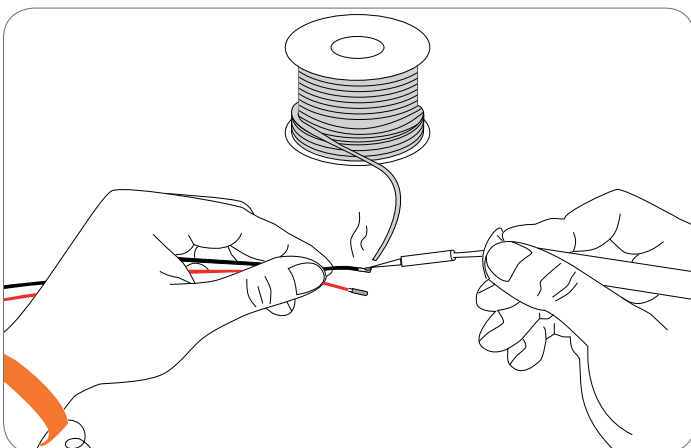
⚠ Turn off the power. Make sure the wires are not under electric current.



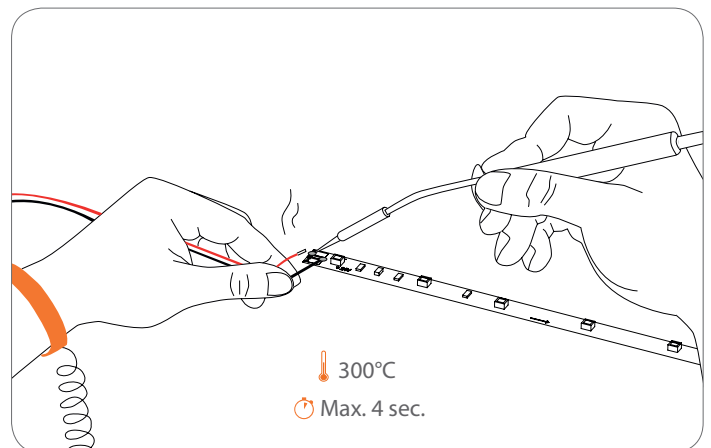
Solder the wires to the PCB. We advise to use a cable with an area not bigger then 0.5 mm^2 .



Pre-solder the connector pads.

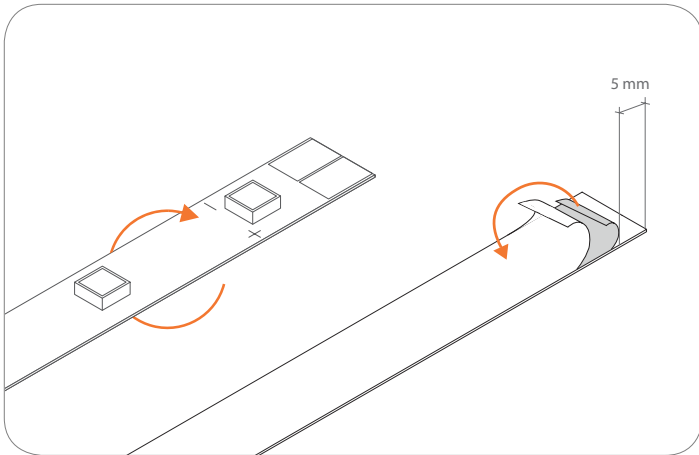


Pre-solder the wires.

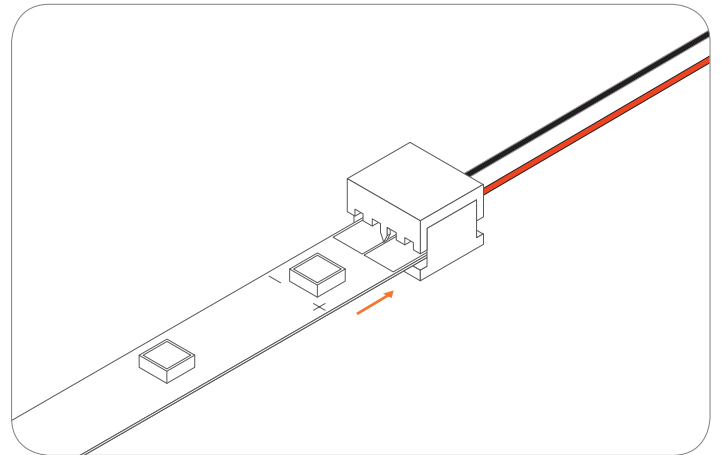


Solder the wires to the connector pads.

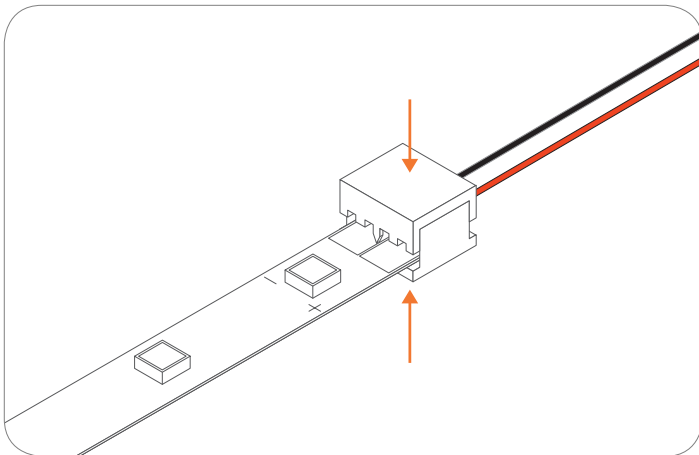
Connect IP00



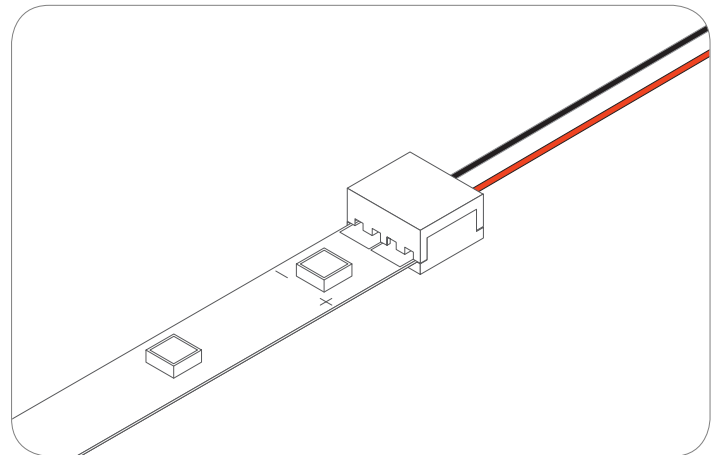
Remove tape protection from back. Peel off tape carefully from the PCB and fold the first 5 mm.



Make sure the PCB and connector are flat on the surface and insert PCB into connector.

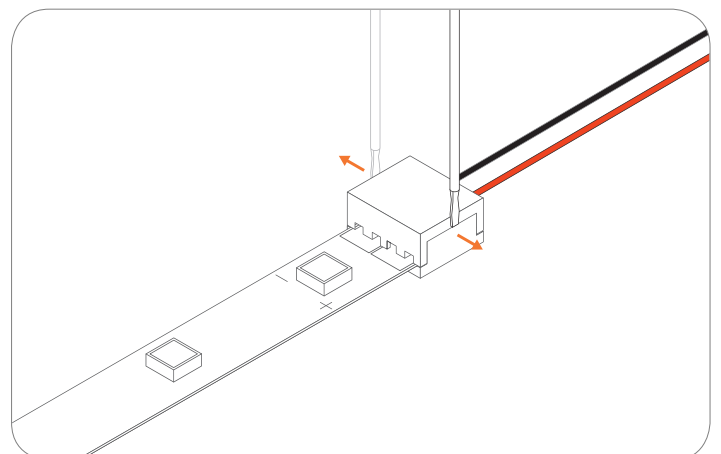


Press connector firmly until it clicks.



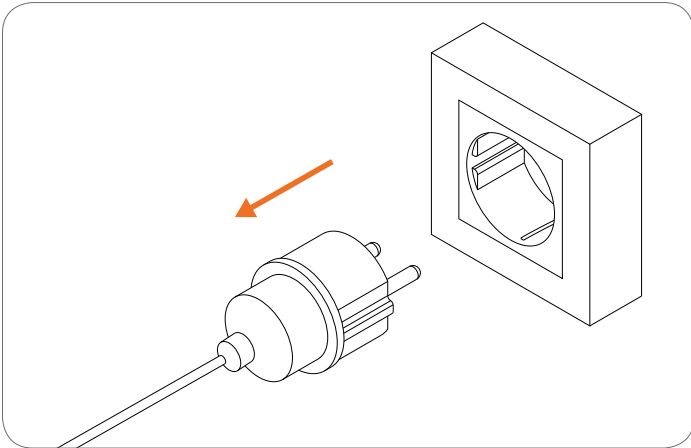
Finished product.

In order to maintain adequate electrical contact, the connectors are designed for single use. Remove is possible but will result in the destruction of the connector.

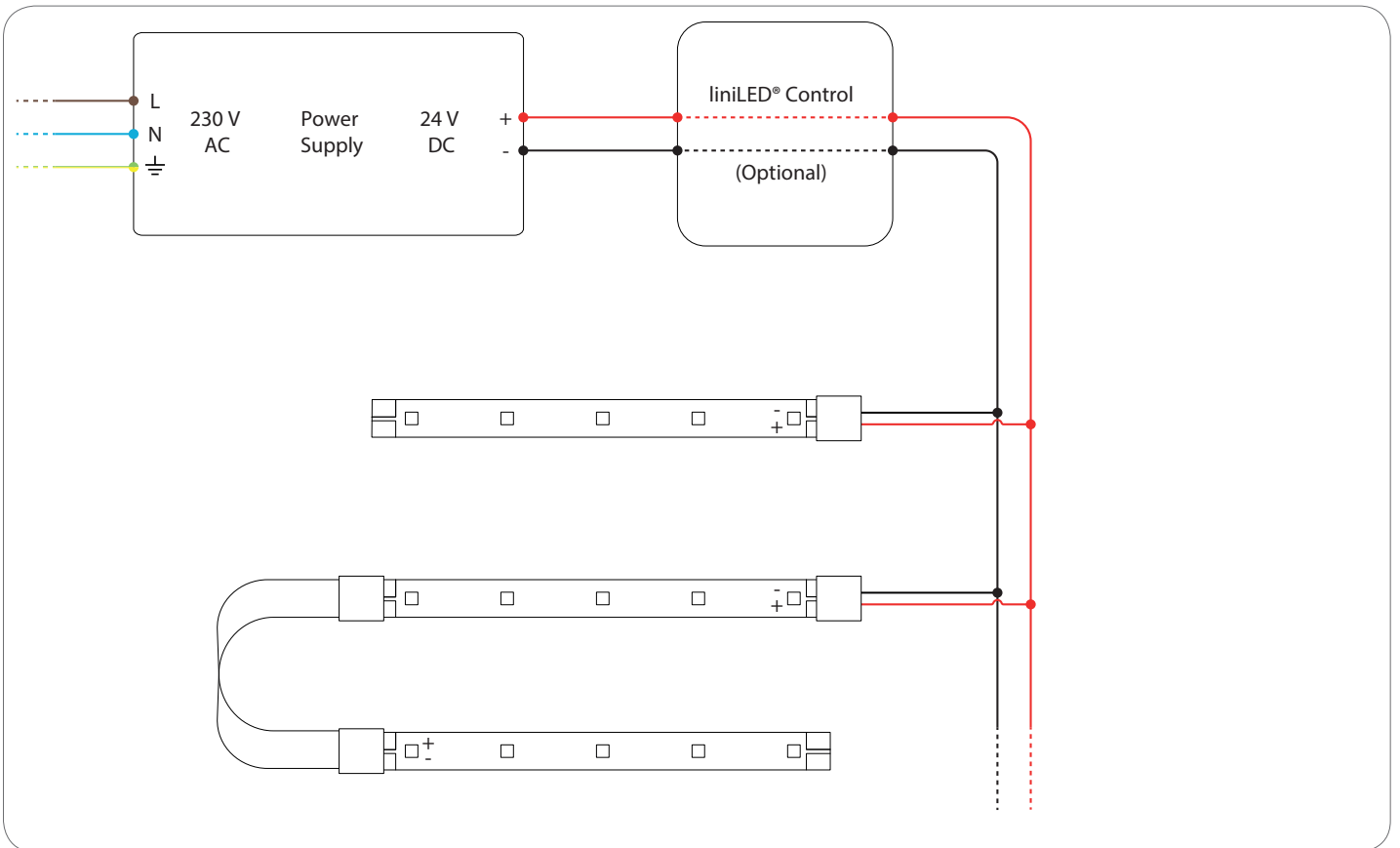


Use a flat screwdriver to open the connector.

Power and connection diagram



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



Symbols



Electro Static Discharge (ESD) sensitive device, apply standard ESD precautions when handling the product.



Manufacturer's declaration that the product meets the applicable EC directives.



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).



Not protected against ingress of solid foreign objects. Not-protected against ingress of water.



Bending of the LED strip is possible with a radius of ≥ 20 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).



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.



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

