



Index

TECHNICAL SPECIFICATIONS	2
BENDING RADIUS	2
PHOTOMETRIC INFORMATION	3
POWER CONSUMPTION	3
POWER AND CONNECTION DIAGRAM	4
MAXIMUM CABLE LENGTH	5
SYMBOLS	6

PCB Photon 2000

The liniLED® LED strip PCB Photon 2000 LED strip (IP00) is a high quality, flexible LED strip equipped with 3M double sided tape. Thanks to its small dimensions the PCB LED strip is ideal for usage in small (indoor) spaces.

In order to power liniLED® products safely, it is absolutely necessary to operate them with an electronically stabilized power supply protected against short circuits, overload and overheating.

To ease the luminaire/ installation approval, electronic control gear for liniLED® products should carry the CE mark. Preferably a controller from the liniLED® Control Range. In Europe, the declarations of conformity must include the following standards: CE: EN 55015, IEC 61547 and IEC 61000-3-2.

For the latest version of this datasheet, visit our website: www.liniLED.com

USPs

- Made in Europe
- Very flexible (bend radius > 20 mm)
- Ideal for small indoor spaces
- Dimmable with PWM technology
- Effective heat dissipation
- Excellent lumen/ Watt ratio
- Available in long lengths
- Available in various colours
- Extensive range of accessories
- Plug & Play

Available colours

Colour	Description
	Flame White 2000K liniLED® PCB Photon 2000 FW 2000K
	Ultra Warm White 2400K liniLED® PCB Photon 2000 UWW 2400K
	Extra Warm White 2700K liniLED® PCB Photon 2000 EWW 2700K
	Warm White 3000K liniLED® PCB Photon 2000 WW 3000K
	Natural White 4000K liniLED® PCB Photon 2000 NW 4000K
	Cold White 6500K liniLED® PCB Photon 2000 CW 6500K

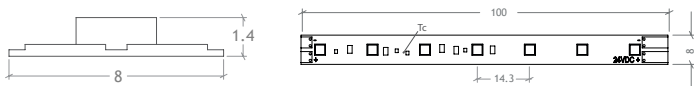


Technical specifications

	Flame White 2000K	Ultra Warm White 2400K	Extra Warm White 2700K	Warm White 3000K	Natural White 4000K	Cold White 6500K
Product code [m]	12153	12154	12155	12156	12157	12158
Power (24 V DC)	17.9 W/m	17.9 W/m	15 W/m	15 W/m	13.6 W/m	13.6 W/m
Power (25 V DC)	18.6 W/m	18.6 W/m	15.6 W/m	15.6 W/m	14.2 W/m	14.2 W/m
CRI	> 80	> 80	> 80 (>90) ¹	> 80 (>90) ¹	> 80 (>90) ¹	> 80
Luminous flux	1650 lm/m	2000 lm/m	2000 lm/m	2000 lm/m	2000 lm/m	2000 lm/m
Luminous efficiency	92 lm/W	112 lm/W	133 lm/W	133 lm/W	147 lm/W	147 lm/W
Spool length	Max. 4.5 m					
Section length	10 cm					
LED	Nichia					
Number of LEDs	7 per section/70 per metre					
Max. connection length	4.5 m					
Operating voltage	24 V DC					
Max. Operating voltage	25 V DC					
Beam angle	120°					
Dimensions	8 x 1.4 mm					
Dimmable	PWM dimming, 24 V DC Common Anode					
Binning	3 MA steps					
Weight	9 gram per metre					
Expected lifetime	B50/L70 > 60,000 hours @ T _c = 40 °C					
Degree of protection (IP)	IP00					
Storage temperature	-40 °C .. 85 °C					
Operating temperature	-20 °C .. 75 °C ²					
Minimal bending radius	20 mm					

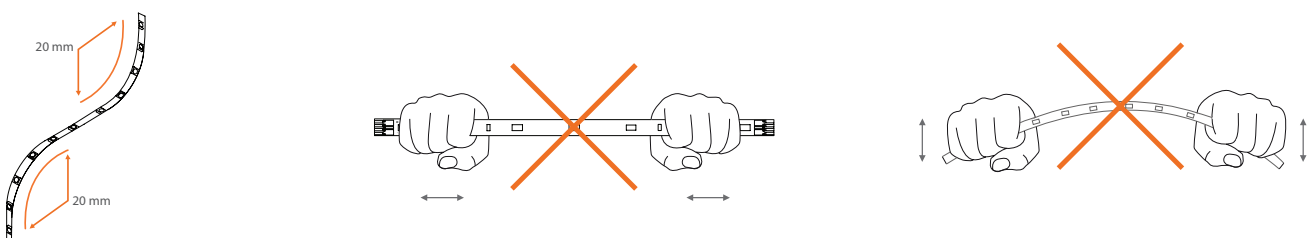
¹ CRI >90 available on request.

² Max. connection length between -30 °C and -20 °C is 3.1 metres.



Bending radius

Maximum bending radius is 20 mm. Solely bend up or downward. Do not compress, stretch or bend the LED strip sideways.

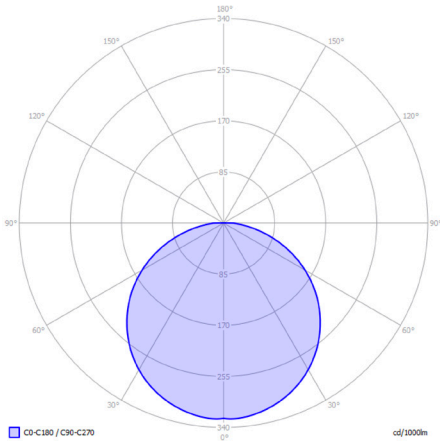


Photometric information

In the process of lighting design and calculations, the luminous flux and beam angle alone are not enough information to create a representative and realistic calculation or render. There is one set of photometric files for a one metre length of LED strip and one for a segment length, that corresponds to the cutting length of each LED strip type. Using the one metre data, quick calculations and long lengths can be simulated with photometric software. The segment data allows very detailed simulations, even curved lines can be approached in high detail.

The information on the website is available in two different file formats:

- Eulumdat (*.ldt)
- IES LM-63-1995 (*.ies)



Power consumption

To power the liniLED® LED strips and lighting fixtures, a power supply from the liniLED® Power assortment can be selected. Selection of the correct power supply must be done by taking the total requested power and the environment into account.

The total power consumption can be calculated by summing the requested power of all connected products. To calculate the power consumption of a single length of LED strip, use the equation below. The typical equation is valid if the product is supplied by a 24 V DC constant voltage power supply. If the output voltage of a power supply is increased, the power consumption will increase with the same ratio and needs to be corrected by using the optional part of the equation found between brackets.

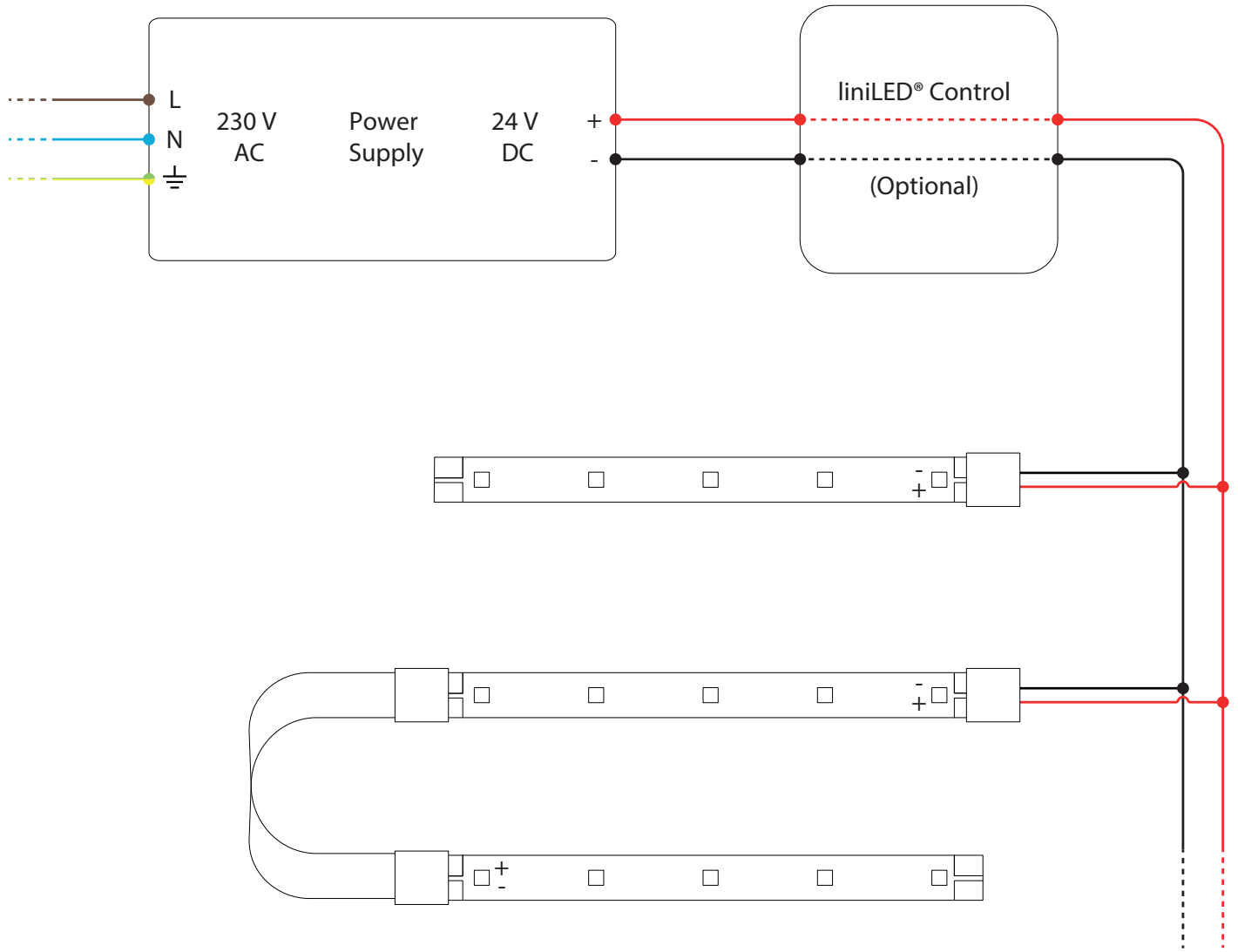
$$P_{STRIP} = P_{PRODUCT} \times X_{LENGTH} \times 110\% \left[\times \frac{U_{SUPPLY}}{24} \right]$$

- P_{STRIP} Calculated power consumption of one LED strip in Watt
- $P_{PRODUCT}$ Typical power consumption in Watt per metre of the selected LED strip
This value can be found under 'Product characteristics' on page 2
- X_{LENGTH} Length of the connected LED strip in metres
- 110% Safety margin to buffer differences over all production batches

Optional:

- U_{SUPPLY} Set supply voltage of the power supply in Volt
- 24** Nominal supply voltage of liniLED® in Volt

Power and connection diagram



Maximum cable length

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 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



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.



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).



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



Operating voltage of 24 V DC.



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.

Disclaimer

The published information is checked to be as accurate as possible, however Triolight B.V. or any reseller of liniLED® cannot be held liable for any damages resulting from misprints, errors, modifications or outdated information. No legal rights can be derived from this document. Triolight B.V. reserves the right to modify the information without informing the customers. Please check for the latest version on www.liniLED.com. This product should not be used in applications, devices or systems where incorrect operation of the product may result in personal injury (includes emergency lighting) without written permission from the board of Triolight B.V. If nevertheless used in such applications, devices or systems, Triolight B.V. cannot be held liable for any resulting injury. liniLED® is a registered trademark of Triolight B.V.