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**Top RGB 160/240**

The liniLED® Top RGB LED strip (IP40) 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. Combine with either the IP67 or IP68 solution.

**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](http://www.liniLED.com)

**UPS's**

- Made in Europe
- Unique co-extrusion technology (hollow chamber)
- IP40 (IP68 with liniLED® Top Mirror Welded Connector)
- Very flexible (bend radius > 30 mm)
- Dimmable
- Effective heat dissipation
- Excellent lumen/ Watt ratio
- Available in long lengths
- UV, frost, seawater & chlorine vapour resistant
- Available in various white colours
- Extensive range of accessories
- Plug & Play

**Available colours**

Colour	Description
RGB	liniLED® Top RGB 160
RGB	liniLED® Top RGB 240



## Product codes & characteristics

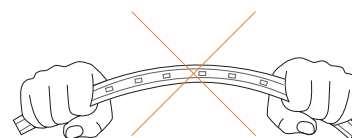
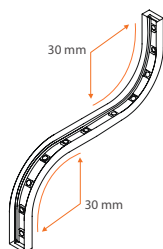
	RGB 160	RGB 240
Product code [m]	11602	11597
Power (24 V DC)	4.8 W/m	7.4 W/m
Power (25 V DC)	5 W/m	8.1 W/m
Luminous flux	139 lm/m (R= 43, G= 90, B= 10)	209 lm/m (R= 69, G= 135, B=21)
Luminous efficiency	29 lm/W	28 lm/W
Max. connection length	10 m	5 m
Expected lifetime	B50/L50 > 50,000 hours @ T <sub>c</sub> = 40 °C	B50/L70 > 50,000 hours @ T <sub>c</sub> = 40 °C
Spool length	Max. 50 m	
Section length	20 cm	
LED	MULTILED	
Number of LEDs	7 per section / 35 per metre	
Operation voltage	24 V DC	
Max. operation voltage	25 V DC	
Beam angle	120°	
Dimensions	8 x 2.2 mm	
Dimmable	PWM dimming, 24 V DC Common Anode	
Weight	9 gram per metre	
Material	PVC (for chemical resistance please visit or website <a href="http://www.liniLED.com">www.liniLED.com</a> )	
Degree of protection (IP)	IP20	
Storage temperature	-20 °C .. 55 °C	
Operation temperature	-30 °C .. 55 °C	
Minimal bending radius	30 mm	

	RGB 160	RGB 240
Red Power (24 V DC)	2 W/m	2.7 W/m
Green Power (24 V DC)	2 W/m	2.9 W/m
Blue Power (24 V DC)	0.8 W/m	2 W/m

<sup>1</sup> Max. connection length between -20 °C and -30 °C is 7 metres (RGB 160) and 3,5 metres (RGB 240).

## Bending radius

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



## 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

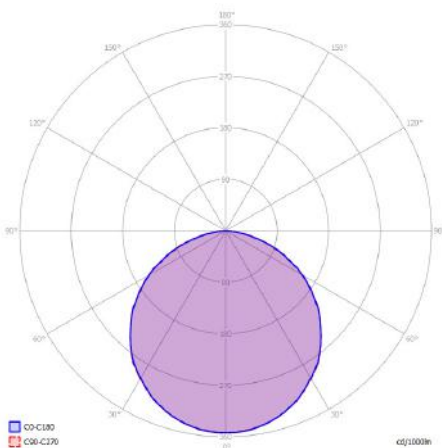
## Photometric information

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.

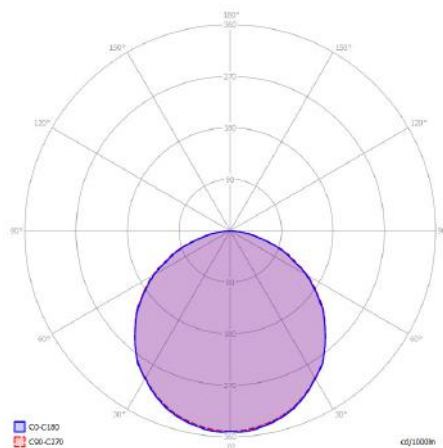
The information on the website is available in two different file formats:

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

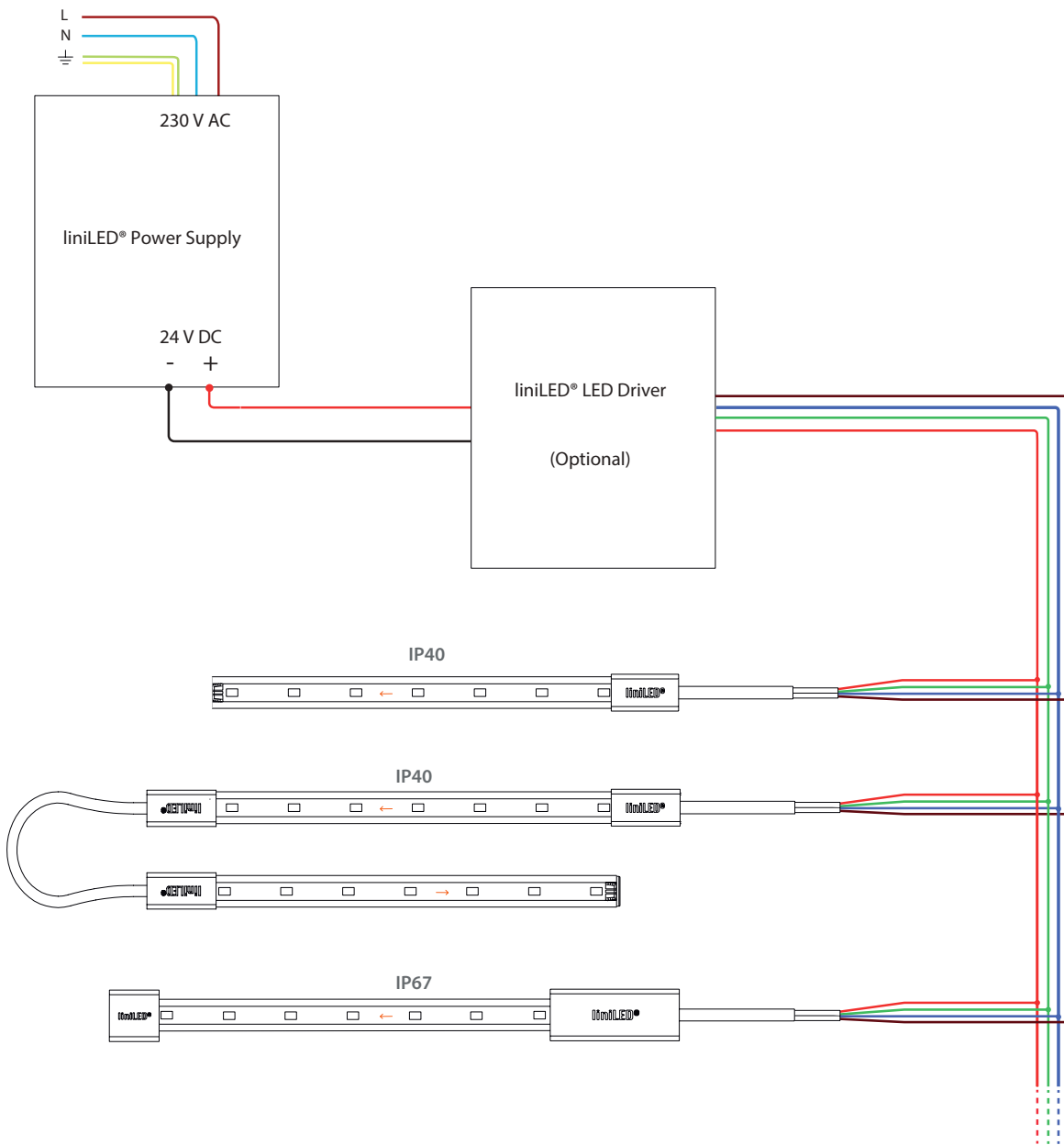
### RGB 160



### RGB 240



## Power & Connection diagram

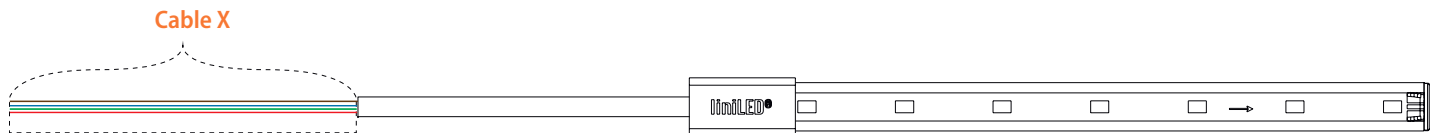


## Cable selection RGB 160

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		Cable X information	LED strip	Max. cable length	
		@ 24 V DC	@ 25V DC			@ 24 V DC	@ 25V DC
liniLED® cable (4 x 0.50 mm <sup>2</sup> ) 0.086 Ω/m 0.035 Ω/m	1 m	62.82 m	121.73 m	liniLED® cable (5 x 0.75 mm <sup>2</sup> ) 0.023 Ω/m 0.012 Ω/m	1 m	207.93 m	402.89 m
	2 m	30.81 m	60.27 m		2 m	101.98 m	199.46 m
	5 m	11.61 m	23.39 m		5 m	38.41 m	77.40 m
	10 m	5.20 m	11.09 m		10 m	17.22 m	36.72 m
liniLED® cable (4 x 0.75 mm <sup>2</sup> ) 0.023 Ω/m 0.023 Ω/m	1 m	134.54 m	260.69 m	liniLED® cable (5 x 1.00 mm <sup>2</sup> ) 0.018 Ω/m 0.009 Ω/m	1 m	276.46 m	535.66 m
	3 m	43.14 m	85.19 m		3 m	135.59 m	265.19 m
	5 m	24.85 m	50.08 m		5 m	51.07 m	102.91 m
	10 m	11.14 m	23.76 m		10 m	22.90 m	48.82 m
liniLED® cable (4 x 1.00 mm <sup>2</sup> ) 0.018 Ω/m 0.018 Ω/m	1 m	178.88 m	346.60 m	liniLED® cable (5 x 1.50 mm <sup>2</sup> ) 0.012 Ω/m 0.006 Ω/m	1 m	415.87 m	805.79 m
	2 m	87.74 m	171.60 m		2 m	203.97 m	398.93 m
	5 m	33.05 m	66.59 m		5 m	76.82 m	154.81 m
	10 m	14.81 m	31.59 m		10 m	34.44 m	73.43 m
liniLED® cable (4 x 1.50 mm <sup>2</sup> ) 0.012 Ω/m 0.012 Ω/m	1 m	269.09 m	521.39 m	liniLED® cable (5 x 2.50 mm <sup>2</sup> ) 0.007 Ω/m 0.004 Ω/m	1 m	692.14 m	1341.07 m
	2 m	131.98 m	258.13 m		2 m	339.46 m	663.93 m
	5 m	49.71 m	100.17 m		5 m	127.86 m	257.64 m
	10 m	22.29 m	47.52 m		10 m	57.32 m	122.21 m
liniLED® cable (4 x 2.50 mm <sup>2</sup> ) 0.007 Ω/m 0.007 Ω/m	1 m	447.85 m	867.75 m				
	2 m	219.65 m	429.60 m				
	5 m	82.73 m	166.71 m				
	10 m	37.09 m	79.08 m				

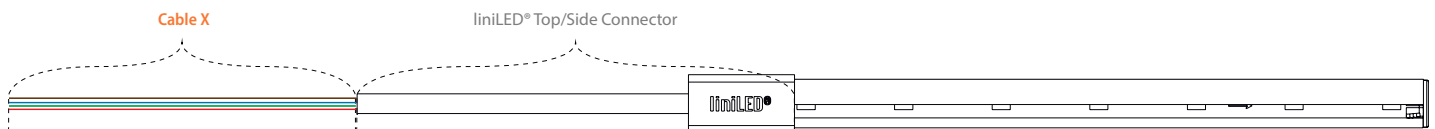


## Cable selection RGB 240

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.

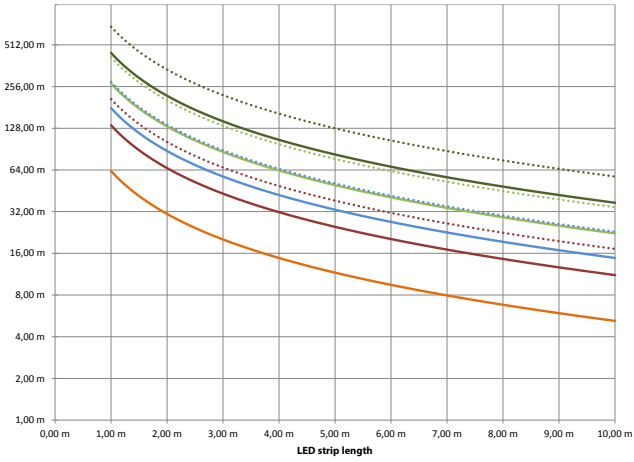
Cable X information	LED strip	Max. cable length		Cable X information	LED strip	Max. cable length	
		@ 24 V DC	@ 25V DC			@ 24 V DC	@ 25V DC
liniLED® cable (4X 0.50 mm <sup>2</sup> ) 0.086 Ω/m 0.035 Ω/m	1 m	41.02 m	79.88 m	liniLED® cable (5 x 0.75 mm <sup>2</sup> ) 0.023 Ω/m 0.012 Ω/m	1 m	135.19 m	263.23 m
	2 m	19.91 m	39.34 m		2 m	65.62 m	129.63 m
	5 m	7.24 m	15.01 m		5 m	23.87 m	49.47 m
liniLED® cable (4 x 0.75 mm <sup>2</sup> ) 0.023 Ω/m 0.023 Ω/m	1 m	86.27 m	167.96 m	liniLED® cable (5 x 1.00 mm <sup>2</sup> ) 0.018 Ω/m 0.009 Ω/m	1 m	179.75 m	349.97 m
	2 m	27.07 m	54.30 m		2 m	87.24 m	172.35 m
	5 m	15.23 m	31.57 m		5 m	31.73 m	65.78 m
liniLED® cable (4 x 1.00 mm <sup>2</sup> ) 0.018 Ω/m 0.018 Ω/m	1 m	114.69 m	223.31 m	liniLED® cable (5 x 1.50 mm <sup>2</sup> ) 0.012 Ω/m 0.006 Ω/m	1 m	270.39 m	526.46 m
	2 m	55.67 m	109.98 m		2 m	131.23 m	259.27 m
	5 m	20.25 m	41.97 m		5 m	47.74 m	98.95 m
liniLED® cable (4 x 1.50 mm <sup>2</sup> ) 0.012 Ω/m 0.012 Ω/m	1 m	172.54 m	335.93 m	liniLED® cable (5 x 2.50 mm <sup>2</sup> ) 0.007 Ω/m 0.004 Ω/m	1 m	450.02 m	876.18 m
	2 m	83.74 m	165.44 m		2 m	218.41 m	431.49 m
	5 m	30.46 m	63.14 m		5 m	79.45 m	164.68 m
liniLED® cable (4 x 2.50 mm <sup>2</sup> ) 0.007 Ω/m 0.007 Ω/m	1 m	287.15 m	559.09 m				
	2 m	139.37 m	275.33 m				
	5 m	50.69 m	105.08 m				



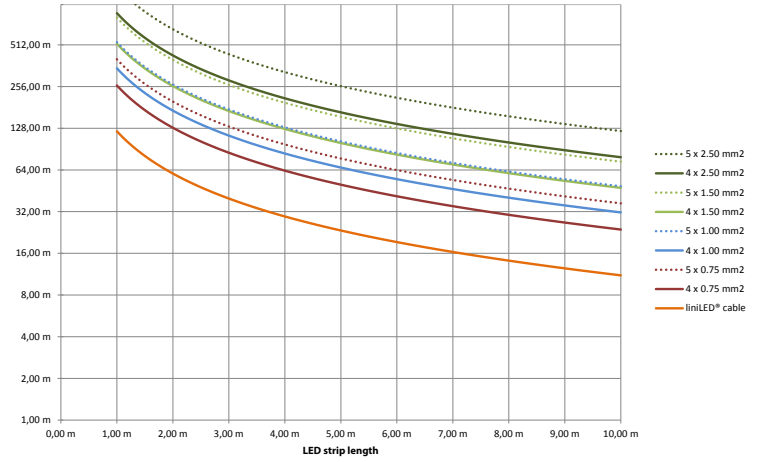
## Maximum cable length

### RGB 160

Maximum cable length @ 24 V DC

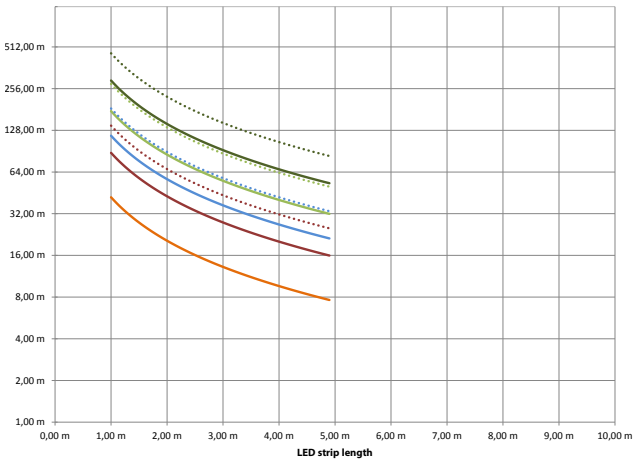


Maximum cable length @ 25 V DC

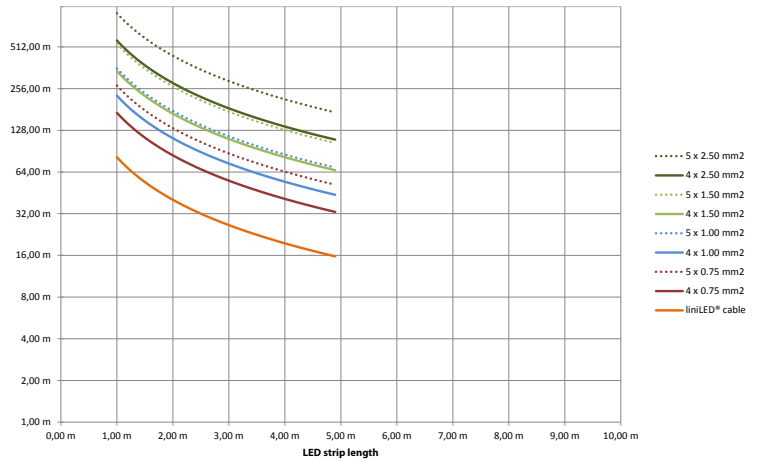


### RGB 240

Maximum cable length @ 24 V DC



















Maximum cable length @ 25 V DC



## Disclaimer

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## 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  $\geq 30$  millimetres in the specified direction.
-  Electrical appliance class III: this product is designed to be supplied from an extra-low voltage ( $\leq 60.0$  V DC or  $\leq 42.4$  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. 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 binning tolerance of this product is 2 MacAdam.
-  The CRI value of this product is 80 or higher.
-  System guarantee of 5 years when the complete system consist of liniLED® products with the 5 year system warranty logo.
-  This product needs to be disposed of separately from normal household waste so it can be recycled. Verify the IP rating for proper use.