

# USER MANUAL

## PCB Tunable White, Tunable Warm White



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**PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION & LEAVE A COPY FOR THE END USER/ MAINTANANCE ENGINEER FOR FUTURE REFERENCE.**



## Warning

**This product comes with a 5 year warranty.**

Warranty void if:

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

This product is intended for professional use only! This product must be installed by a qualified and certified installer according to local rules and guidelines. Organic Lighting Systems, Inc. cannot be held liable for (consequential) damage and/or injuries due to unintended use and/or installation errors.

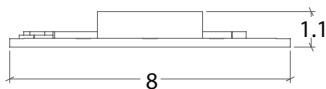
## Product Information

The OrgaLED® LED strip (IP40) is a high quality, flexible LED strip with a unique co-extrusion technology. Designed for an endless range of indoor and outdoor applications.

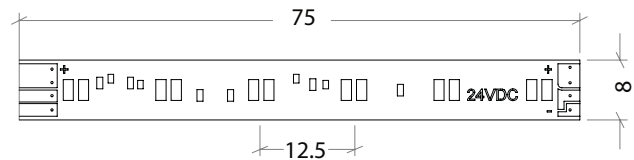
*\* For use in wet environments, use mirror welded connectors or IP68 waterproof kits.*

## Product Dimensions

OrgaLED strip front view:

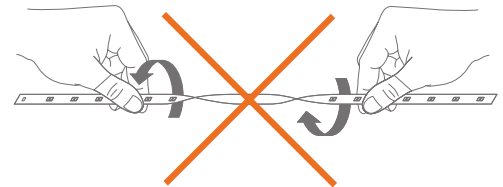
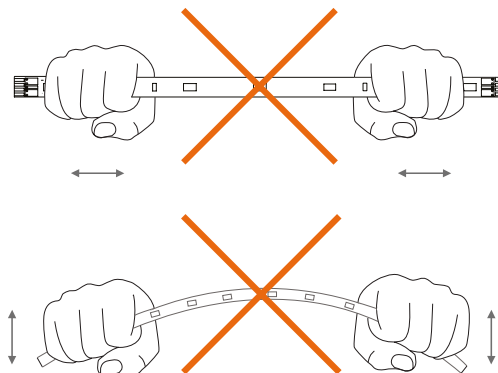
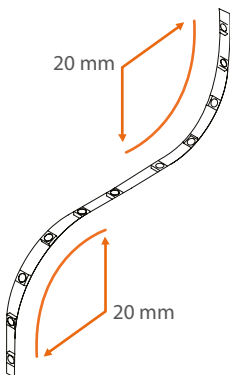


OrgaLED strip top view, cuttable sections:



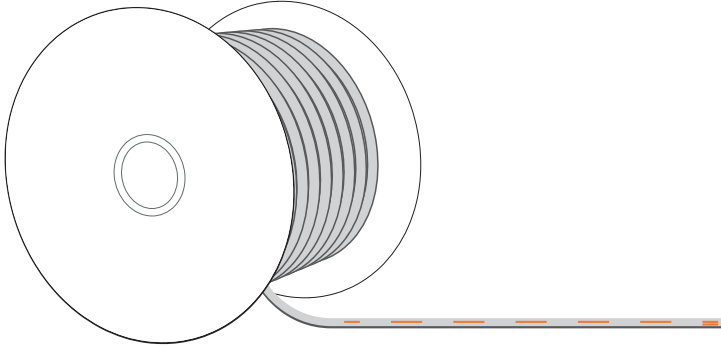
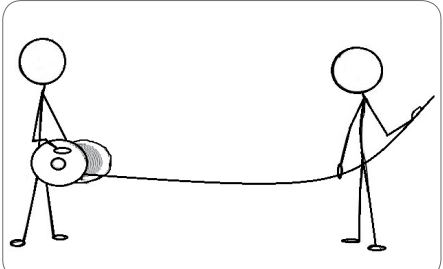
## Bending Radius

Maximum bending radius is 1.2 in. Solely bend up or downward. Do not compress, stretch or bend the LED strip.



## Cutting Instructions

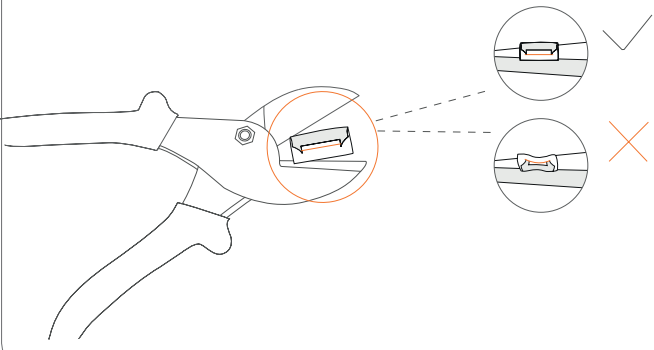
**1**

**⚠️ 10ft lengths require a second person's assistance.**

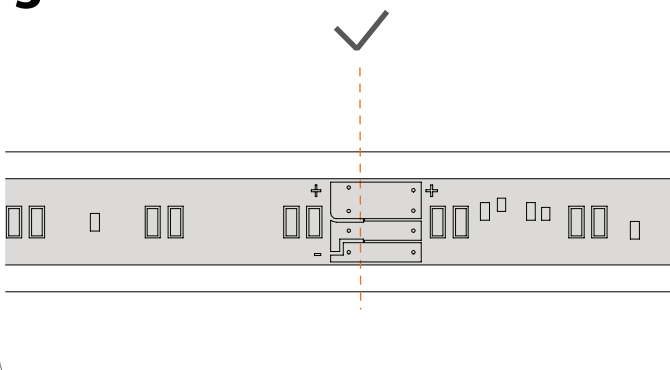
**⚠️** The LED strip has to be unreeled on a horizontal surface at the time of installation. Do not unreele the spool of LED strip before installation. Lengths over 10ft should be installed with the help of a second person to support the strip to ensure that the connector is not stressed.

**2**



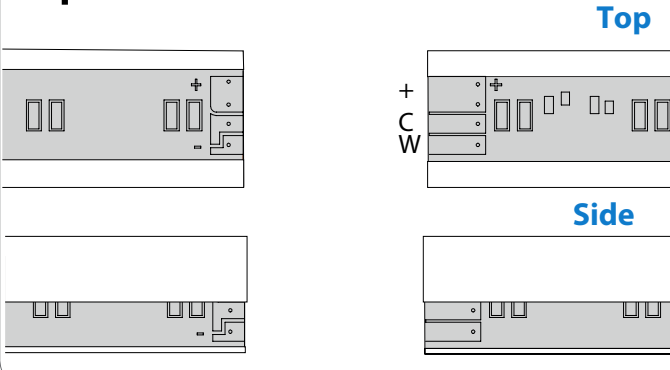
Place the OrgaLED® LED strip on the base of the cutting tool. Not doing so may result in a deformed LED strip.

**3**



**Top view** | Make sure the cut is vertical as illustrated in the image above. Only cut on the dotted lines to prevent damaging the LED strip.

**4**



**Top**

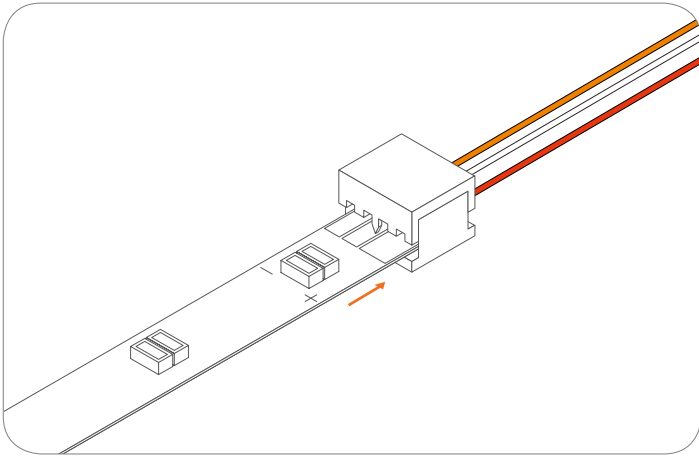
**Side**

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

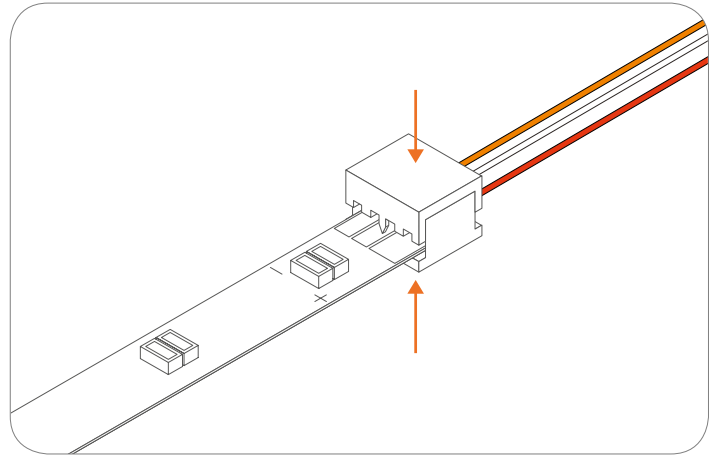
## IP40 and Waterproofing IP67 or IP68 Options

User Manual | OrgaLED® PCB Tunable White, Tunable Warm White

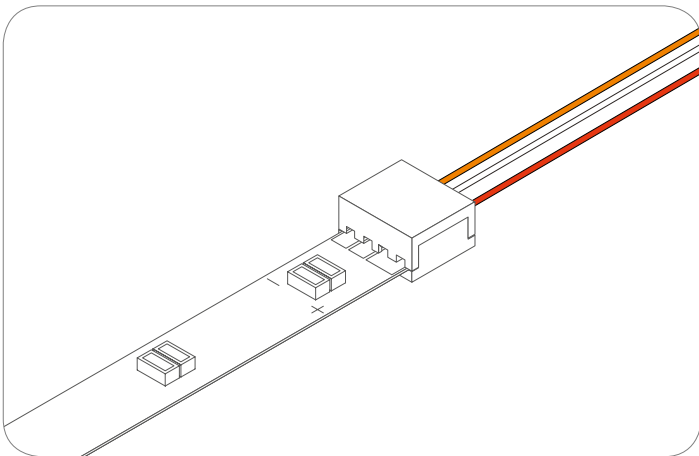
Depending on the area where the OrgaLED® LED strip is installed we offer a range of solutions to cope with external factors. The product portfolio includes a range of IP40, IP67 and IP68 connectors. Below the different connectors are displayed for use in various environments.



Open the PCB connector.



Push the OrgaLED® PCB LED strip into the connector. Make sure the + is above.

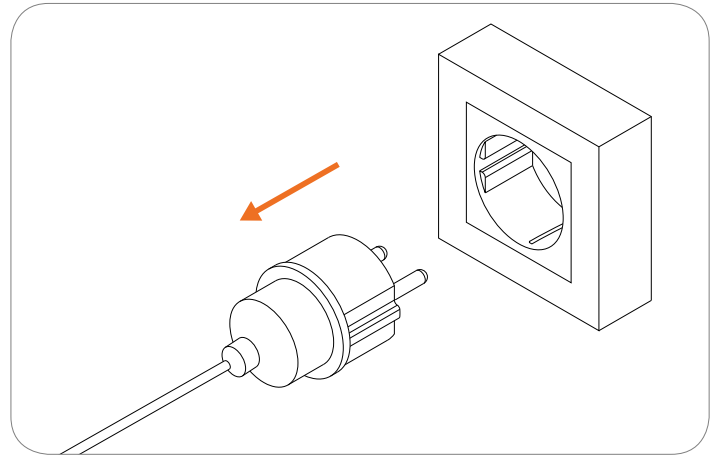


Close the PCB connector.

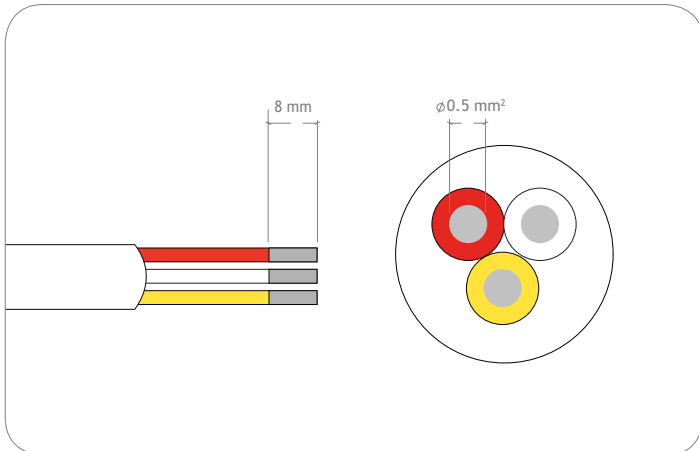
## Solder Connections (IP20)



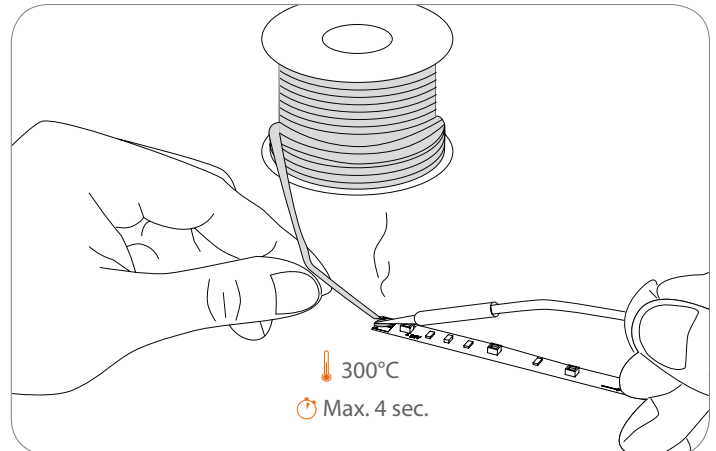
⚠ Work in an ESD protected environment. Make use of an anti-static strap and use lead-free solder.



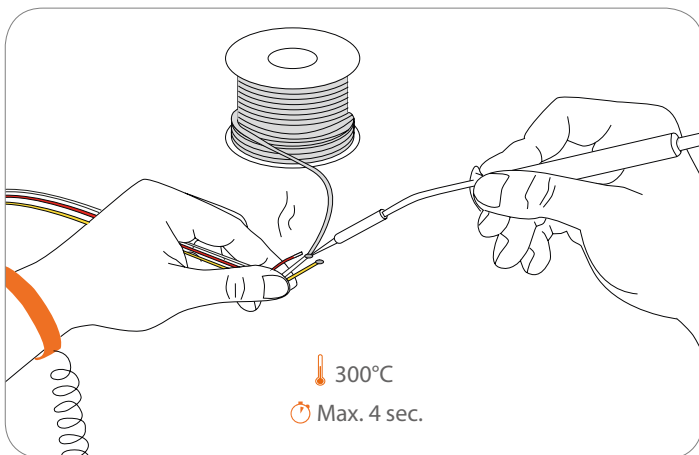
⚠ Turn off the power. Make sure the wires are not under electric current.



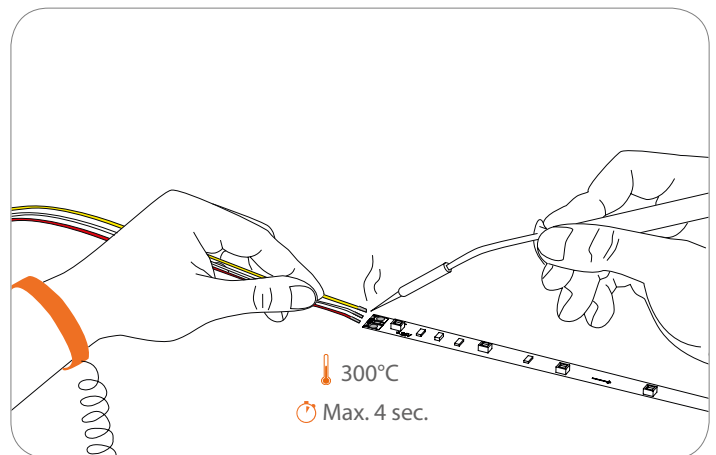
Solder the wires to the PCB. We advise to use a cable with an area not bigger than 0.5 mm<sup>2</sup>.



Pre-solder the connector pads.



Pre-solder the wires.



Solder the wires to the connector pads.

## General

**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/or those responsible for installation, maintenance and usage.**

- Organic Lighting Systems, Inc. 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.

## 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.
- Do not fasten anything on the product, same applies for 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. It 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.

## Operation and Use

**Solely use the product when its working correctly. If not, switch the power off immediately and advise an electrical specialist in the following case.**

- Damage is visible on the product.
- The product does not function.
- Smoke or steam rises from the product.
- Crackling sounds are noticeable.
- The product is overheating.
- Repairs on the installation may only be performed by qualified electricians. Product repairs may solely be done by Organic Lighting Systems, Inc.

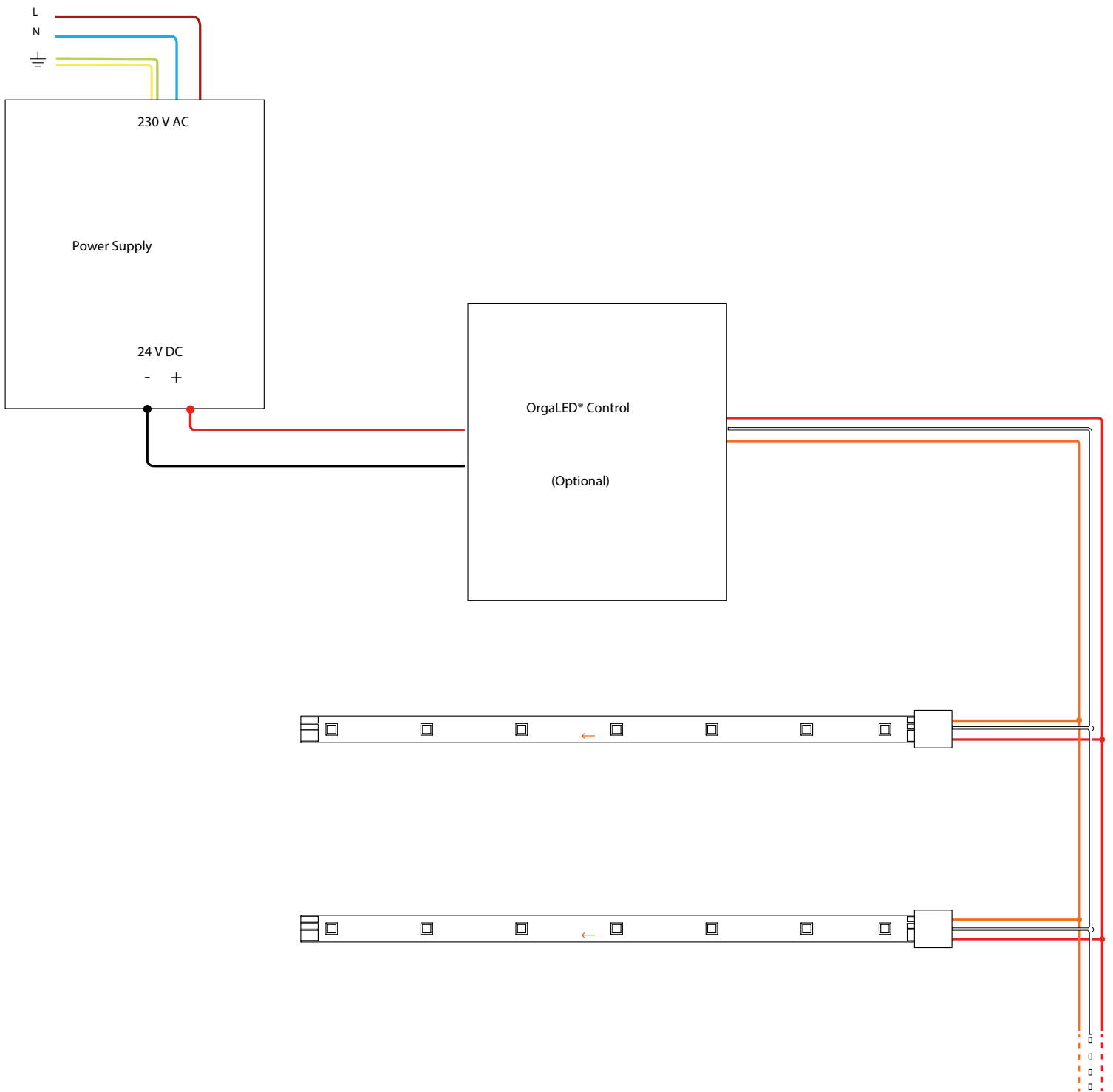
## Cleaning and Maintenance

- 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.

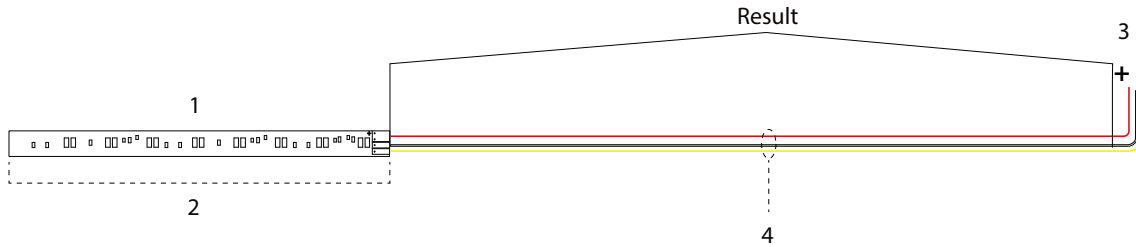
# Power Supply



## Cable Selection

The following chart gives the maximum 24V supply cable run lengths based on 22AWG, 20AWG, 18AWG, 16AWG and 14AWG wire gauge to avoid voltage drop to the strips, with a 3ft liniLED connector cable length.

A wiring plan with branches from a single power supply connection cannot exceed the maximum connector strip length shown on the charts and if complex will require special electrical calculations to ensure adequate power to maintain full LED output.



**Result** = Maximum cable length based on the cable thickness and power supply voltage.

### 1. Color Temperature

### TUNABLE WHITE

2. LED Strip Length		3'		6'		16'		29'	
		24V DC	25V DC	24V DC	25V DC	24V DC	25VDC	24V DC	25V DC
4. Cable Size	22 AWG	113	220	54	108	19	41	9	21
	20 AWG	170	331	82	162	29	61	13	31
	18 AWG	225	440	109	216	38	81	18	41
	16 AWG	339	662	163	325	58	122	27	62
	14 AWG	564	1102	272	541	96	204	44	104

### 1. Color Temperature

### TUNABLE WARM WHITE

2. LED Strip Length		3'		6'		16'		29'	
		24V DC	25V DC	24V DC	25V DC	24V DC	25VDC	24V DC	25V DC
4. Cable Size	22 AWG	123	240	59	118	21	45	10	23
	20 AWG	185	361	89	177	32	67	15	34
	18 AWG	246	480	119	236	42	89	20	46
	16 AWG	370	721	178	354	64	134	30	69
	14 AWG	615	1200	297	590	106	223	50	115



## Product Specifications

<b>Tunable White 1200</b>	<b>2700-6500K</b>
Product code	012173
Luminous flux *	368.9 lm/ft
Beam angle	120°
Dimensions	0.31 x 0.055 in
Power (24 V DC)	3.14 W/ft
- 2700K	1.6 W/ft
- 6500K	1.53 W/ft
Power (25 V DC)	3.26 W/ft
<b>Tunable Warm White 1200</b>	<b>2700-6500K</b>
Product code	012467
Luminous flux *	365.9 lm/ft
Beam angle	120°
Dimensions	0.31 x 0.055 in
Power (24 V DC)	3.45W/ft
- 2700K	1.85 W/ft
- 6500K	1.58 W/ft
Power (25 V DC)	3.6 W/ft
Spool length	Max. 29.5 ft
Max. connection length	29.5 ft
CRI	> 80
Section length	3 in
LED	Duris <sup>tm</sup> E 3
Number of LEDs	12 per section / 48.8 per ft
Operation voltage	24 V DC
Max. operation voltage	25 V DC
Dimmable	PWM dimming, 0-10V dimming
Binning	2 MA steps
Weight	0.09 oz/ft
Expected lifetime	B50/L70 > 60,000 hours @ 104 °F
Degree of protection (IP)	IP20
Storage temperature	-40 °F - 185 °F
Operation temperature	-22 °F - 167 °F
Minimal bending radius	1.2 in
Max. connection length between	-4 °F and -22°F is 23 ft

## Product Specifications

<b>Tunable White 2000</b>	<b>2700-6500K</b>
Product code	012144
Luminous flux *	609.8 lm/ft
Beam angle	120°
Dimensions	0.31 x 0.055 in
Power (24 V DC)	5.4 W/ft
- 2700K	3 W/ft
- 6500K	2.44 W/ft
Power (25 V DC)	5.64 W/ft
Spool length	Max. 14.76
Max. connection length	14.76 ft
CRI	> 80
Section length	3 in
LED	Duris™ E 3
Number of LEDs	12 per section / 48.8 per ft
Operation voltage	24 V DC
Max. operation voltage	25 V DC
Dimmable	PWM dimming, 0-10V dimming
Binning	2 MA steps
Weight	0.09 oz/ft
Expected lifetime	B50/L70 > 60,000 hours @ 104 °F
Degree of protection (IP)	IP20
Storage temperature	-40 °F - 185 °F
Operation temperature	-22 °F - 167 °F
Minimal bending radius	1.2 in
Max. connection length between	-4 °F and -22°F is 23 ft


## Product Specifications


<b>Tunable White 3000</b>	<b>2700-6500K</b>
Product code	012145
Luminous flux *	914.6 lm/ft
Beam angle	120°
Dimensions	0.31 x 0.055 in
Power (24 V DC)	8.4 W/ft
- 2700K	4.73 W/ft
- 6500K	3.72 W/ft
Power (25 V DC)	8.81 W/ft
Spool length	Max. 9.84
Max. connection length	9.84 ft
CRI	> 80
Section length	3 in
LED	Duris™ E 3
Number of LEDs	12 per section / 48.8 per ft
Operation voltage	24 V DC
Max. operation voltage	25 V DC
Dimmable	PWM dimming, 0-10V dimming
Binning	2 MA steps
Weight	0.09 oz/ft
Expected lifetime	B50/L70 > 60,000 hours @ 104 °F
Degree of protection (IP)	IP20
Storage temperature	-40 °F - 185 °F
Operation temperature	-22 °F - 167 °F
Minimal bending radius	1.2 in
Max. connection length between	-4 °F and -22°F is 23 ft


## Product Specifications


<b>Tunable White 4000</b>	<b>2700-6500K</b>
Product code	012146
Luminous flux *	1158.5 lm/ft
Beam angle	120°
Dimensions	0.31 x 0.055 in
Power (24 V DC)	11.1 W/ft
- 2700K	6.34 W/ft
- 6500K	4.76 W/ft
Power (25 V DC)	11.55 W/ft
Spool length	Max. 6.88
Max. connection length	6.88 ft
CRI	> 80
Section length	3 in
LED	Duris <sup>tm</sup> E 3
Number of LEDs	12 per section / 48.8 per ft
Operation voltage	24 V DC
Max. operation voltage	25 V DC
Dimmable	PWM dimming, 0-10V dimming
Binning	2 MA steps
Weight	0.09 oz/ft
Expected lifetime	B50/L70 > 60,000 hours @ 104 °F
Degree of protection (IP)	IP20
Storage temperature	-40 °F - 185 °F
Operation temperature	-22 °F - 167 °F
Minimal bending radius	1.2 in
Max. connection length between	-4 °F and -22°F is 23 ft


## Symbols


- 


UL is a world leader in product safety testing and certification. UL sets standards and tests products to make sure they meet standards.
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
The ETL Listed mark indicates that your product has been tested by Intertek and found in compliance with accepted UL standards.
- 


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.
- 


Suitable for mounting on all surfaces and suitable to cover with insulating material.
- 


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.
- 


Bending of the LED strip is possible with a radius of  $\geq 1.2$  inches 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).
- 


System guarantee of 5 years when the complete system consist of OrgaLED® products with the 5 year system warranty logo.
- 

Product is resistant against ultraviolet (UV) light or sunlight. Non-UV resistant products can degrade or discolor fast when exposed to UV.
- 


Product can be cleaned with normal cleaning agents as specified in the datasheet under 'chemical compliances.'
- 

This product can be stored and used below 32 degrees Fahrenheit. 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 submerged n swimming pools and their environments. Disinfectants will have no harmful effect on product. For chemical specifications of these elements see datasheet. Verify the IP rating for proper use.
- 

The CRI value of this product is 80 or higher.
- 

The binning tolerance of this product is 2 MacAdam.

## Disclaimer

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