

LUMINO

VectorFLEX

INSTALLATION MANUAL

IMVFXS_R2202

TECHNICAL SUPPORT

+44(0) 1279 635 411
www.lumino.lighting

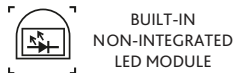
LUMINO DISTRIBUTION LTD

Lumino House, Lovet Road
Harlow, Essex CM19 5TB
United Kingdom

Authorised EU Representative:
LDL LIGHTING EUROPE LIMITED
The Black Church, St Mary's Place
Dublin, D07 P4AX
Ireland

Installers must read this document and any other referenced documents in full before commencing installation work. Failure to observe all installation guidance in this document may result in unsafe installation, cause permanent product damage and void product warranty.

This document is subject to change without notice. Check for latest documentation with LUMINO. Copyright © LUMINO. E&OE



HANDLING PRECAUTIONS

LED TAPE

To avoid permanent damage, do not allow small or sharp objects to apply pressure on to any part of the LED tape.

STRESS

Never stand or place weighted items on the product. The product is not vandal resistant and has no IK rating. Do not subject the product to impact forces.

POWER CABLES

The product end caps, power cables and connectors must not be pulled or twisted. Never pull the product by its power cables or hang it from its power cables or connectors.

CUTTING AND SAWING

The product must not be sawn, drilled or otherwise modified in any way. Only use sturdy scissor to cut the product where indicated.

DAMAGES

Inspect the product. If you see any damage upon unpacking, report to LUMINO immediately and do not install the product.

LOCATION

Suitable in dry locations only. This product is unsuitable for wet or damp locations.
IP20 rated for protection against objects 12.5mm or larger.

Protect product from dust, paint and harmful substances during installation and use. Ensure product is not exposed to VOC gases. Do not obstruct the product and its light output.

SAFETY GUIDANCE

LED MODULE

The product is classed as a built-in, non-integrated LED module and therefore must be mounted into an enclosure, box, luminaire or the like. Do not use the product mounted directly to a wall, ceiling or other surface without some kind of enclosure.

WIRING GUIDE

Follow the guidance shown in the provided wiring guide, including max cable lengths, cable sizes and other wiring instructions. When running cables through an enclosure, ensure cables are protected from damage, separated from mains voltage cables and anchored against being pulled.

QUALIFIED INSTALLER

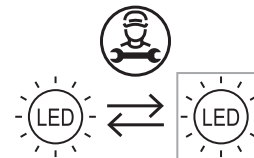
Installation must be carried out by a qualified person and conducted in accordance with local regulations and applicable standards.

THERMAL MANAGEMENT

Ensure ambient temperature (Ta) does not exceed 25°C (77°F) and case temperature (Tc) does not exceed 70°C (158°F). Exceeding max Tc will cause permanent damage and void the product warranty. Allow sufficient clear air space for the LED drivers, and suitable access to the drivers as specified on installation instructions.

REPAIR AND REPLACEMENT

If the product is not functioning, contact LUMINO to register a Service Call for factory repair or replacement. See page 4 for Ecodesign and end of life information.



DRIVERS

POWER OFF

Product and driver must not be live wired. Switch off power before work begins. Follow instructions and guidance for the make and model of driver being used.

24VDC SELV

Only use drivers with a maximum output of 24VDC. Drivers must be SELV, constant voltage with both overload and short-circuit protection.

DIMMERS

Check dimmer is compatible with the driver and certified to local regulations.

INRUSH CURRENT

Many constant voltage LED drivers can have high inrush current at power-on. Driver's inrush current can be many times the normal operating current. Use a suitable MCB. Type C MCBs are normally suitable but if inrush current is a persistent problem an inrush suppressor may be required.

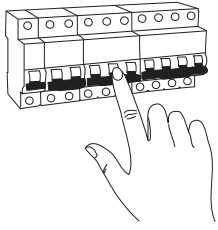
PROTECTION

Use only with 24VDC Class 2 power unit to UL1310 standard with overload and short-circuit protection. Rate drivers for at least 10% above load. Driver protection circuitry must not be relied upon to protect secondary 24VDC electrical circuits from damage caused by over-current or short circuit. DC fuses or DC electronic circuit breakers are recommended for full protection. Allow for access to drivers for maintenance and sufficient clear air space for ventilation.

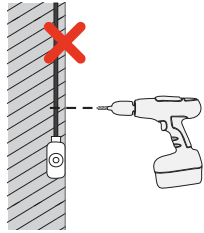
CABLING

Do not overload the driver. Damage will be caused by incorrect input voltage, reverse polarity or short circuit. Plan for loads, driver locations, dimming and cabling prior to start of work. Ensure basic insulation is maintained between mains and dimming control wires.

IMPORTANT!



TURN POWER OFF!



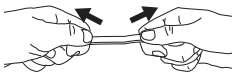
CHECK THE WALL



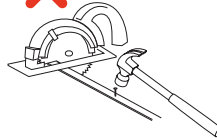
DO NOT TWIST



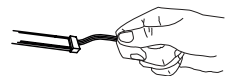
BENDING BREAKS
CIRCUIT! MIN BEND
RADIUS Ø100MM



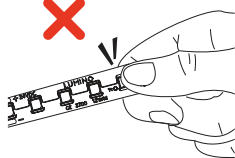
DO NOT PULL TAPE



DO NOT HAMMER
OR SAW



DO NOT PULL
CABLE

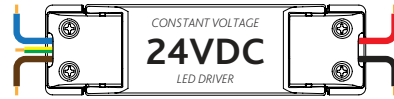


DO NOT PUT
PRESSURE ON
ANY OF THE
COMPONENTS

INSTALLATION

1. Prepare Power Supply

This product requires a 24VDC power supply. Please refer to provided wiring guide document. Failure to follow guide may result in damage to the product and voiding of warranty.



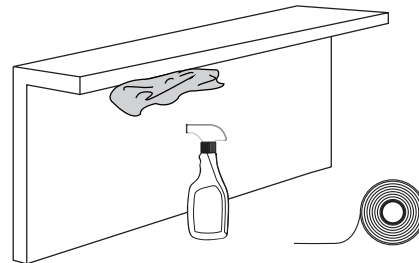
2. Mounting Surface

Up to 12WM

Clean the mounting surface and dry. Uneven or low-adhesion surfaces may need an additional aluminium tape pre-applied. LUMINO suggests 3M Foil Tape 425.

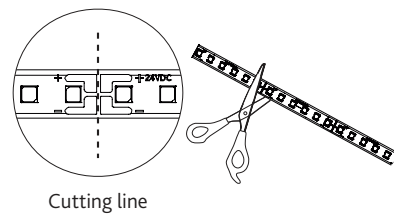
12WM and above

Higher powered LED tapes require additional heatsinking and must not be mounted directly onto other surfaces. LUMINO suggests using Vector V20S KIT. Contact technical support for assistance.



3. Trim LED Tape

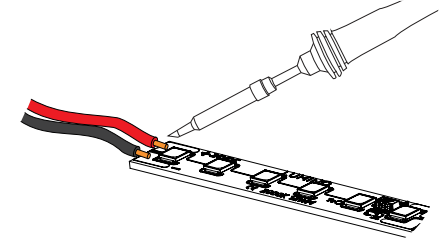
Measure the length required and cut between solder pads using scissors. Please refer to the following page for cut increments.



4. Solder Cables

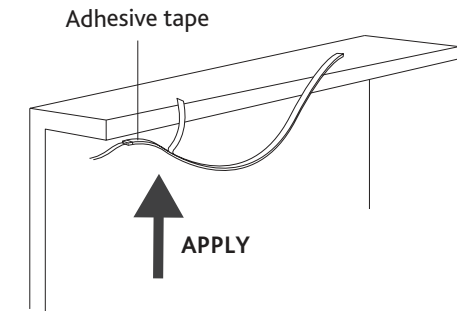
Attach the cable to the LED solder pads.
Take care not to overheat the pads.

IMPORTANT: Observe LED tape's polarities!



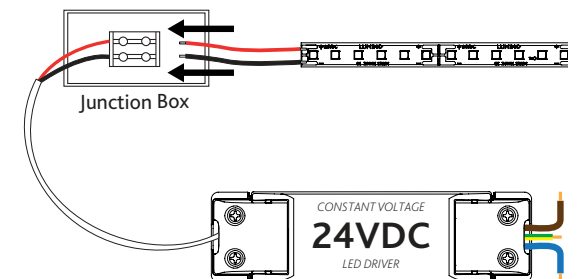
5. Install LED Tape

Align end with the beginning of the LED run and press down.
For longer lengths, simultaneously unpeel backing and press down on the LED tape, working along the length of the LED tape.

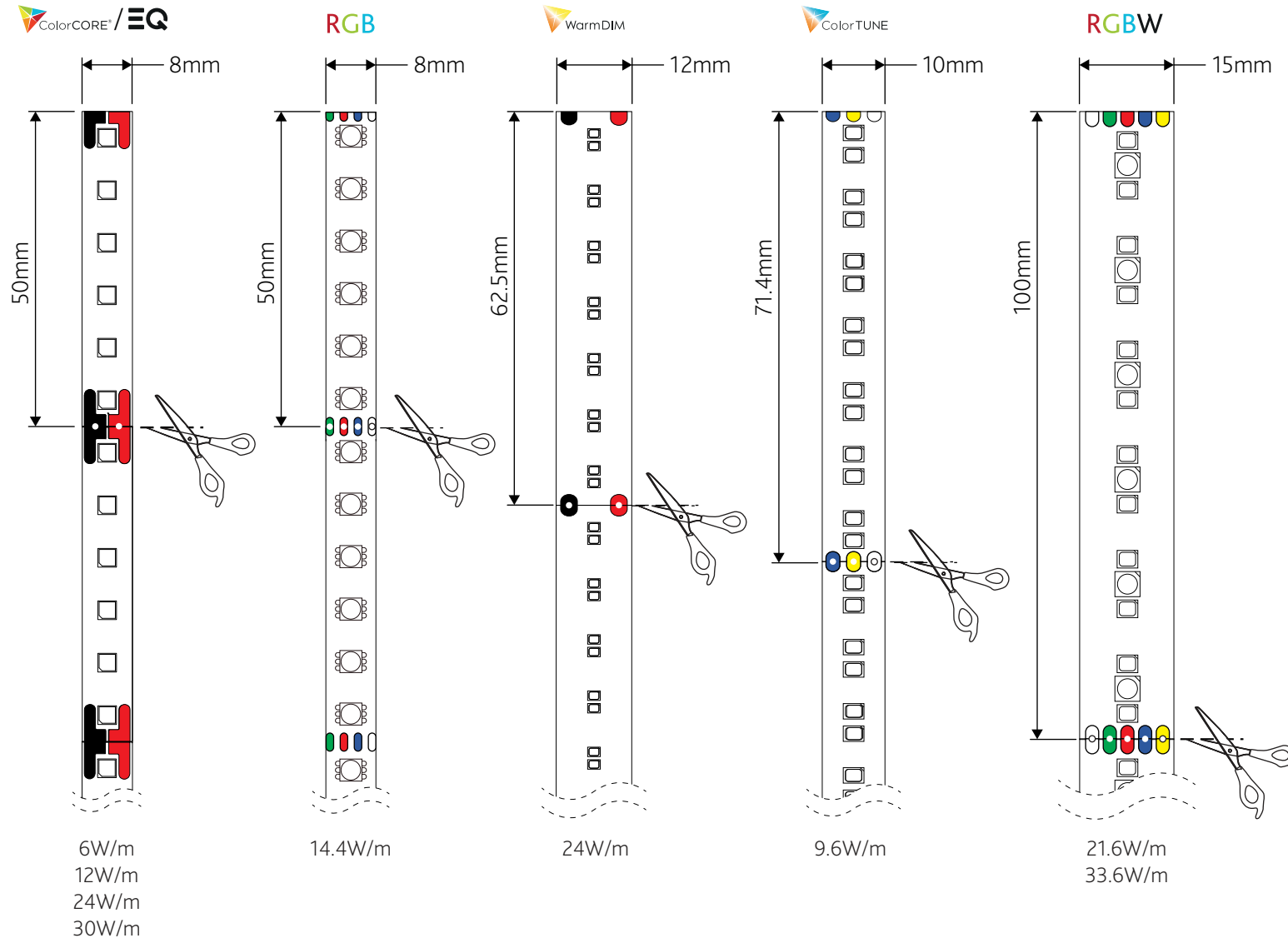


6. Connect to LED Driver

With the power off. Feed the power cables to the LED tape's location, connecting the product to the LED driver. Finalise all electrical connections and test the circuit. If the product does not function as expected, turn power off immediately and check all connections.



LED TAPE CUT INCREMENTS AND SOLDER CONNECTIONS



Ribbon Cables

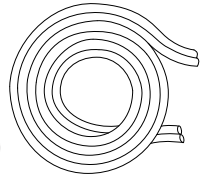
VECA-CA2P034-PM
2 Core (Red / Black)

VECA-CA3P034-PM
3 Cores (Blue / Yellow / White)

VECA-CA4P034-PM
4 Cores (White / Blue / Red / Green)

VECA-CA5P034-PM
5 Cores (White / Green / Red / Blue / Yellow)

22 AWG ribbon cables supplied by the metre, please specify length when ordering.



Wiring Diagram

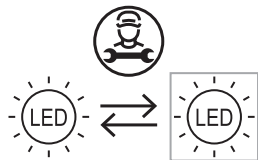
LUMINO

LED MODULE

This product is classed as a built-in, non-integrated LED module in accordance with the LED Modules for General Lighting standards BS EN 62031:2008, AMD1:2012, AMD2:2014, AMD2:2015 and BS EN 62031:2020. Therefore, it must be mounted into an enclosure, box, luminaire or the like. Do not use the product mounted directly to a wall, ceiling or other surface without some kind of enclosure.

ECODESIGN REGULATION

This product is considered to be a "Light Source" in the sense of Regulations (EU) 2019/2020 and (EU) 2019/2015. Light source is replaceable only by a qualified professional. Energy efficiency classes shown in the Energy Rating table. Replacement light sources must be of equal or higher energy rating. Full electrical, mechanical, thermal and optical functionality must be restored by a qualified professional when light source is replaced.



DISMANTLING

Dismantling at the end of life:

The product shall be disassembled in accordance to the provided instructions.

Containing products shall be separated from building material and/or from other additional mounting accessories by means of a professional installer.

Separate control gear and light sources must be disposed of at certified disposal companies in accordance with Directive 2012/19/EU (WEEE) in the EU and with Waste Electrical and Electronic Equipment (WEEE) Regulations 2013 in the UK.

LUMINO is a member of the WEEE producer compliance scheme. Registration number: WEE/MM8138AA

ENERGY RATING

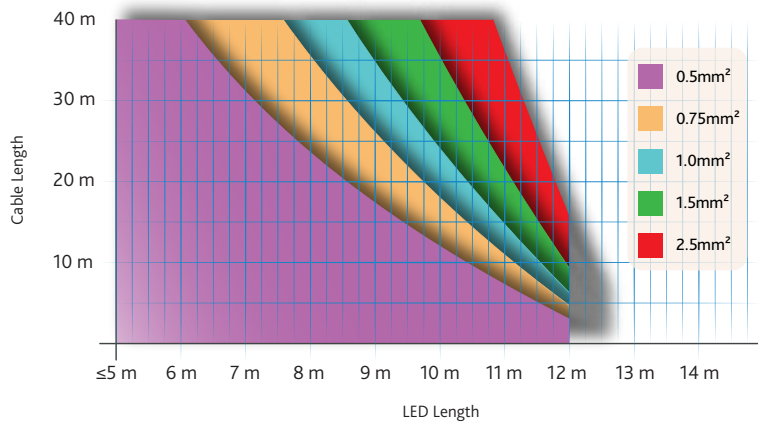
This product is a light source of energy efficiency classes as shown:

LED	CCT	6W/m	9.6W/m	12W/m	24W/m	30W/m
ColorCORE	4000K	F	-	F	F	F
	3500K	F	-	F	F	F
	3000K	F	-	F	F	F
	2700K	F	-	F	G	G
	2500K	F	-	F	G	G
	2200K	F	-	F	G	G
EQ	4000K	F	-	F	G	G
	3000K	G	-	G	G	G
	2700K	G	-	G	G	G
ColorTUNE	4000K - 2200K	-	-	-	F	-
	3000K - 1800K	-	-	-	F	-
WarmDIM	3000K	-	F	-	-	-
RGBW	RGB + 3000K	-	-	F	G	-
RGB	N/A					

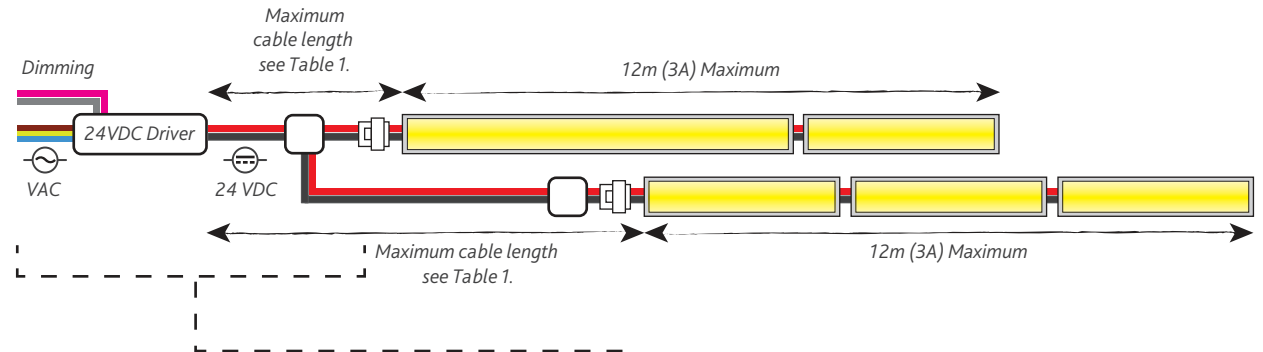
Maximum Cable Length Table 1.

LED LENGTH	CURRENT	0.5mm ²	0.75mm ²	1mm ²	1.5mm ²	2.5mm ²
< 6 m	< 1.50 A					
6 m	1.50 A	40 m				
6.5 m	1.63 A	35.5 m				
7 m	1.75 A	31.25 m				
7.5 m	1.88 A	27.25 m	40 m			
8 m	2.00 A	23.5 m	35.5 m			
8.5 m	2.13 A	20.25 m	30.5 m	40 m		
9 m	2.25 A	17.25 m	26 m	34.75 m		
9.5 m	2.38 A	14.5 m	21.75 m	29.25 m	40 m	
10 m	2.50 A	12 m	18 m	24 m	35.25 m	
10.5 m	2.63 A	9.5 m	14.25 m	19.25 m	28.25 m	40 m
11 m	2.75 A	7.25 m	11 m	14.75 m	21.5 m	36 m
11.5 m	2.88 A	5 m	7.75 m	10.25 m	15.25 m	25.5 m
12 m	3.00 A	3 m	4.75 m	6.25 m	9.25 m	15.5 m

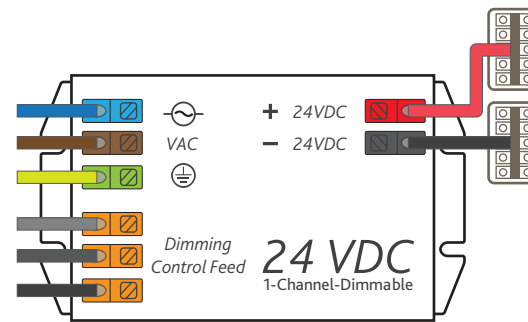
40 m max.



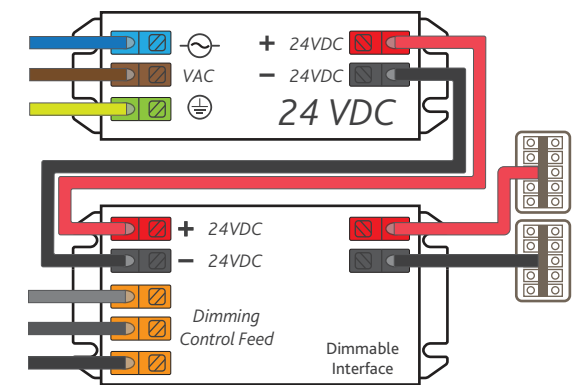
Wiring Diagram



Dimmable Driver Wiring



Driver + Dimming Interface Wiring



IM-6Wm_ColorCORE_EQ_R2101

For further help regarding installation visit lumino.lighting

⚠ Cable lengths are based on average resistance for typical copper cables. Cable characteristics may vary according to manufacturer, temperature, copper purity, connections etc.

Use 24VDC drivers with overload and short-circuit protection. Use reputable driver manufacturers with appropriate standards for the local requirements.

USA & Canada:
Use only with Class 2 power unit to UL1310 standard. Use only with maximum output 24VDC voltage Class 2 power unit.

⚠ Maximum cable lengths shown above are calculated for voltage drop and do not consider EMI. Long cables can potentially emit EMI. Do not exceed the maximum cable length stated by the driver manufacturer. Installers must ensure EMI emissions do not exceed local regulated limits.

Shielded cables and ferrite coils can be used where applicable.

Installers must ensure voltage drop does not exceed 5%.

Driver protection circuitry must not be relied upon to protect secondary 24VDC electrical circuits from damage caused by overcurrent or short circuit. DC fuses or DC electronic circuit breakers are recommended to provide additional protection.

Constant voltage LED drivers can have high inrush current at power-on. Driver inrush current can be many times the normal operating current.

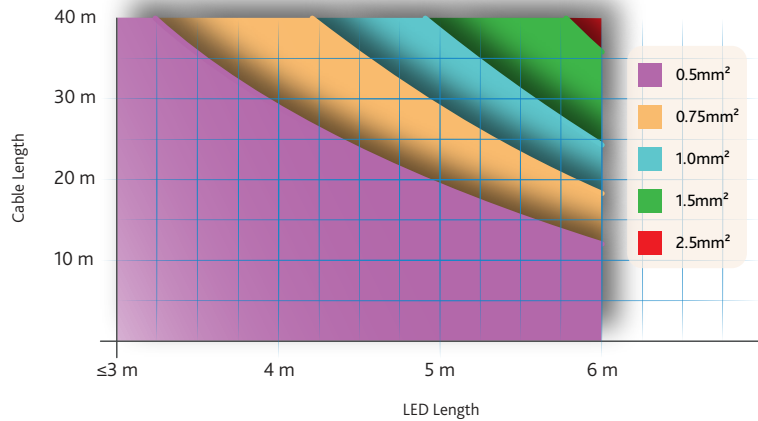
Use a suitable MCB. Type C MCBs are normally suitable but if inrush current is a persistent problem an inrush suppressor may be required.

- Installation must be carried out by qualified electrician.
- Electrical work to be conducted in accordance with local regulations.
- Power must be disconnected prior to installation work.
- Ensure free-moving air space around LEDs and drivers.
- Protect the LEDs from dust and paint during installation and use.
- Plan for loads, driver locations, cables sizes etc prior to installation.
- Shielded control pair required for dimming signal wires.
- Incorrect voltage, reverse polarity or short circuit will cause damage.

Maximum Cable Length Table 1.

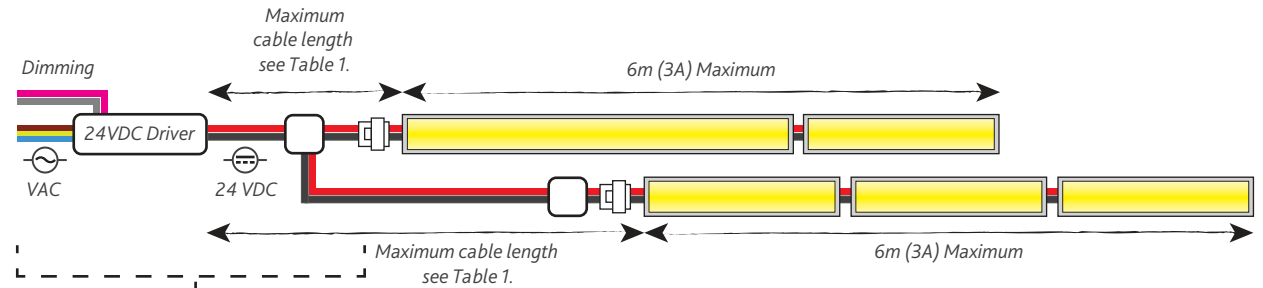
LED LENGTH	CURRENT	0.5mm ²	0.75mm ²	1mm ²	1.5mm ²	2.5mm ²
< 3 m	< 1.50 A					
3 m	1.50 A	40 m				
3.5 m	1.75 A	35.5 m				
4 m	2.00 A	29 m	40 m			
4.5 m	2.25 A	23.5 m	35.5 m	40 m		
5 m	2.50 A	19.25 m	28.75 m	38.5 m		
5.5 m	2.75 A	15.5 m	23.25 m	31 m	40 m	
6 m	3.00 A	12 m	18.25 m	24.25 m	35.75 m	

40 m max.

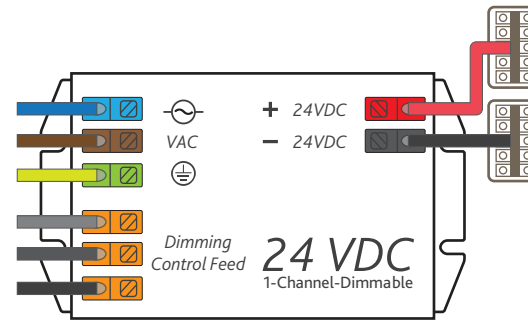


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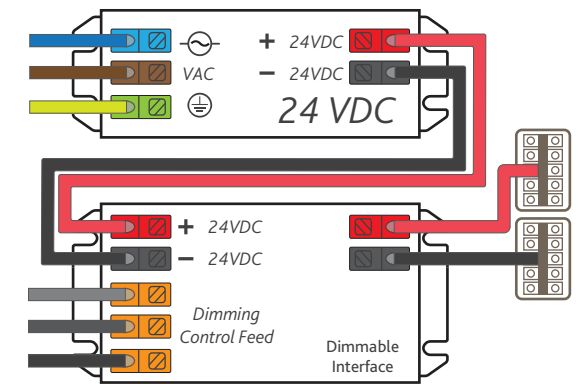
Wiring Diagram



Dimmable Driver Wiring



Driver + Dimming Interface Wiring



Use 24VDC drivers with overload and short-circuit protection. Use reputable driver manufacturers with appropriate standards for the local requirements.

USA & Canada:
Use only with Class 2 power unit to UL1310 standard. Use only with maximum output 24VDC voltage Class 2 power unit.

! Maximum cable lengths shown above are calculated for voltage drop and do not consider EMI. Long cables can potentially emit EMI. Do not exceed the maximum cable length stated by the driver manufacturer. Installers must ensure EMI emissions do not exceed local regulated limits.

Shielded cables and ferrite coils can be used where applicable.

Installers must ensure voltage drop does not exceed 5%.

Driver protection circuitry must not be relied upon to protect secondary 24VDC electrical circuits from damage caused by overcurrent or short circuit. DC fuses or DC electronic circuit breakers are recommended to provide additional protection.

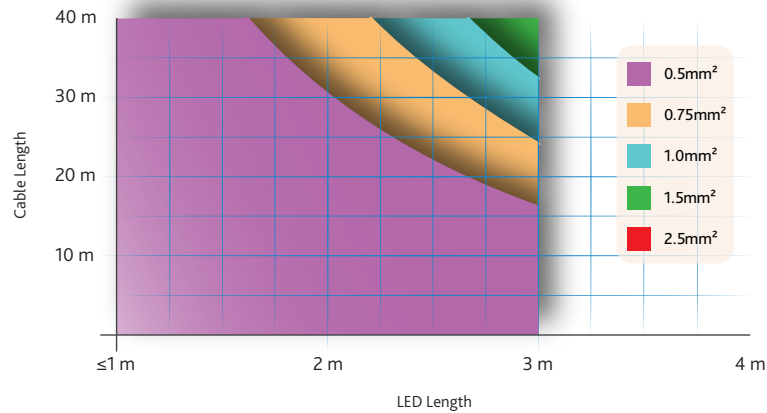
Constant voltage LED drivers can have high inrush current at power-on. Driver inrush current can be many times the normal operating current.

Use a suitable MCB. Type C MCBs are normally suitable but if inrush current is a persistent problem an inrush suppressor may be required.

- Installation must be carried out by qualified electrician.
- Electrical work to be conducted in accordance with local regulations.
- Power must be disconnected prior to installation work.
- Ensure free-moving air space around LEDs and drivers.
- Protect the LEDs from dust and paint during installation and use.
- Plan for loads, driver locations, cables sizes etc prior to installation.
- Shielded control pair required for dimming signal wires.
- Incorrect voltage, reverse polarity or short circuit will cause damage.

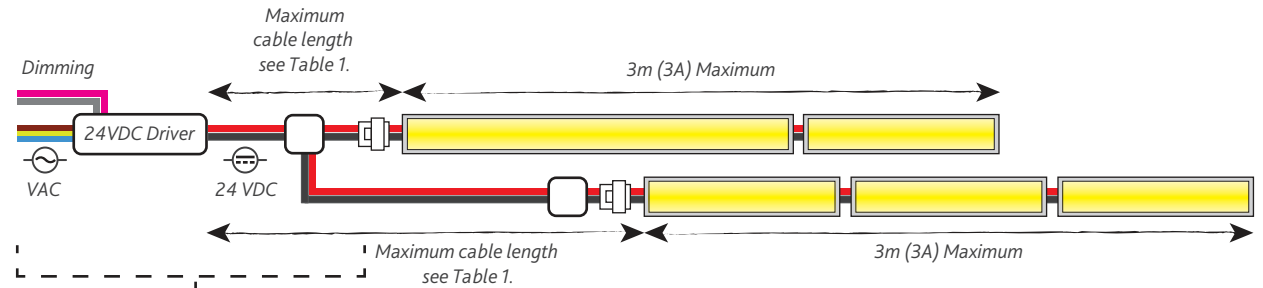
Maximum Cable Length Table 1.

LED LENGTH	CURRENT	0.5mm ²	0.75mm ²	1mm ²	1.5mm ²	2.5mm ²			
<1.5 m	< 1.5 A	40 m max.							
1.5 m	1.5 A						40 m		
2 m	2 A						30.5 m	40 m	
2.5 m	2.5 A						22 m	33.25 m	40 m
3 m	3 A						16.25 m	24.25 m	32.5 m

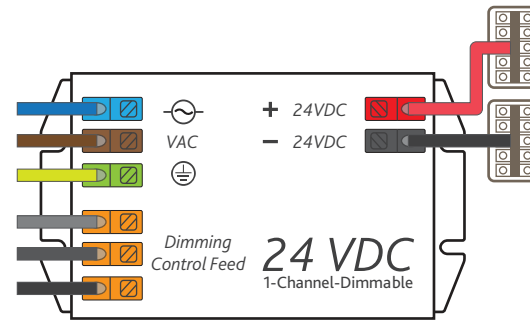


! Cable lengths are based on average resistance for typical copper cables. Cable characteristics may vary according to manufacturer, temperature, copper purity, connections etc.

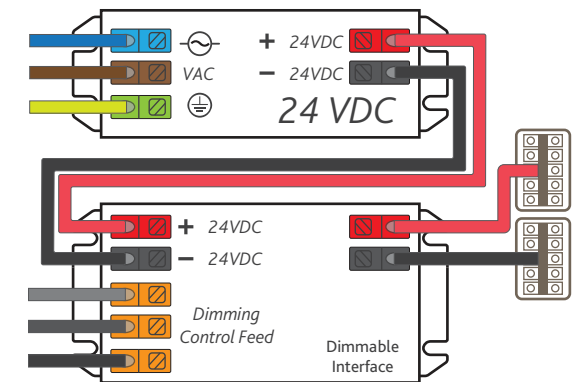
Wiring Diagram



Dimmable Driver Wiring



Driver + Dimming Interface Wiring



Use 24VDC drivers with overload and short-circuit protection. Use reputable driver manufacturers with appropriate standards for the local requirements.

USA & Canada:
Use only with Class 2 power unit to UL1310 standard. Use only with maximum output 24VDC voltage Class 2 power unit.

! Maximum cable lengths shown above are calculated for voltage drop and do not consider **EMI**. Long cables can potentially emit **EMI**. Do not exceed the maximum cable length stated by the driver manufacturer. Installers must ensure **EMI** emissions do not exceed local regulated limits.

Shielded cables and ferrite coils can be used where applicable.

Installers must ensure voltage drop does not exceed 5%.

Driver protection circuitry must not be relied upon to protect secondary 24VDC electrical circuits from damage caused by overcurrent or short circuit. DC fuses or DC electronic circuit breakers are recommended to provide additional protection.

Constant voltage LED drivers can have high inrush current at power-on. Driver inrush current can be many times the normal operating current.

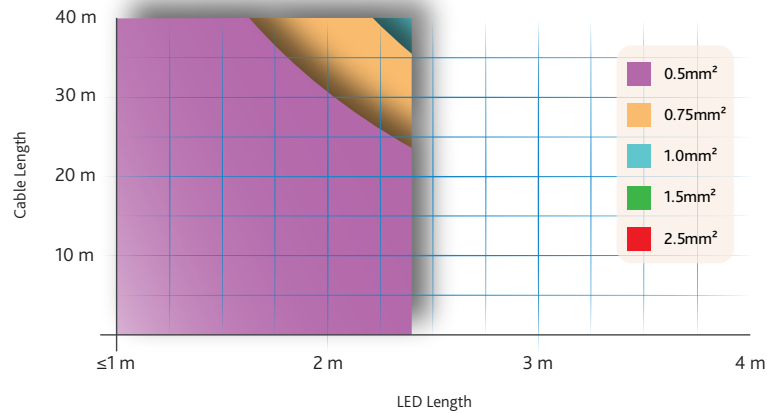
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- Installation must be carried out by qualified electrician.
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- Power must be disconnected prior to installation work.
- Ensure free-moving air space around LEDs and drivers.
- Protect the LEDs from dust and paint during installation and use.
- Plan for loads, driver locations, cables sizes etc prior to installation.
- Shielded control pair required for dimming signal wires.
- Incorrect voltage, reverse polarity or short circuit will cause damage.

Maximum Cable Length Table 1.

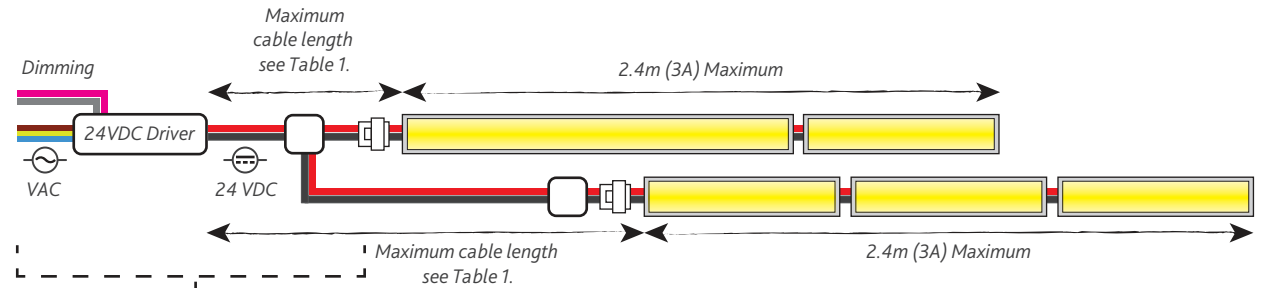
LED LENGTH	CURRENT	0.5mm ²	0.75mm ²	1mm ²	1.5mm ²	2.5mm ²
<1 m	< 0.63 A					
1 m	1.25 A	40 m				
1.5 m	1.88 A	33.5 m	40 m			
2 m	2.5 A	22.25 m	33.5 m	40 m		
2.4 m	3 A	16.5 m	24.75 m	33.25 m	40 m	

40 m max.

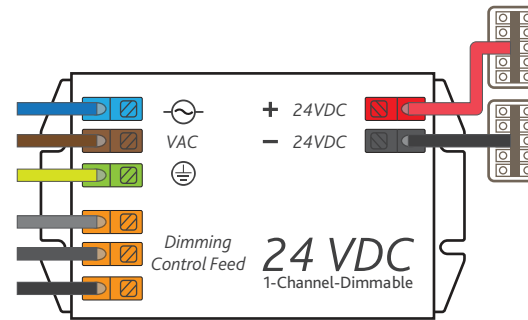


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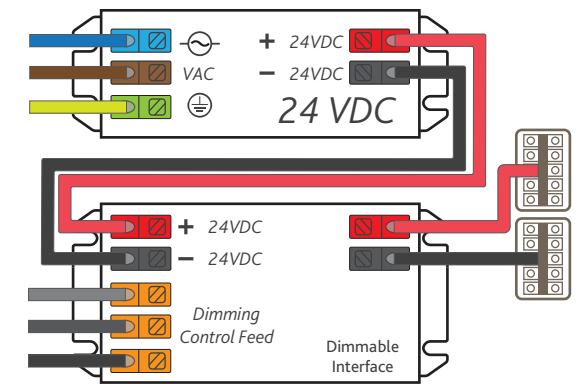
Wiring Diagram



Dimmable Driver Wiring



Driver + Dimming Interface Wiring



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USA & Canada:
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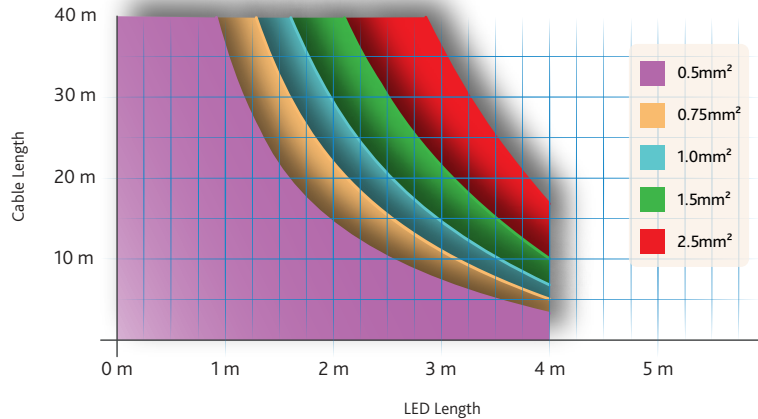
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- Shielded control pair required for dimming signal wires.
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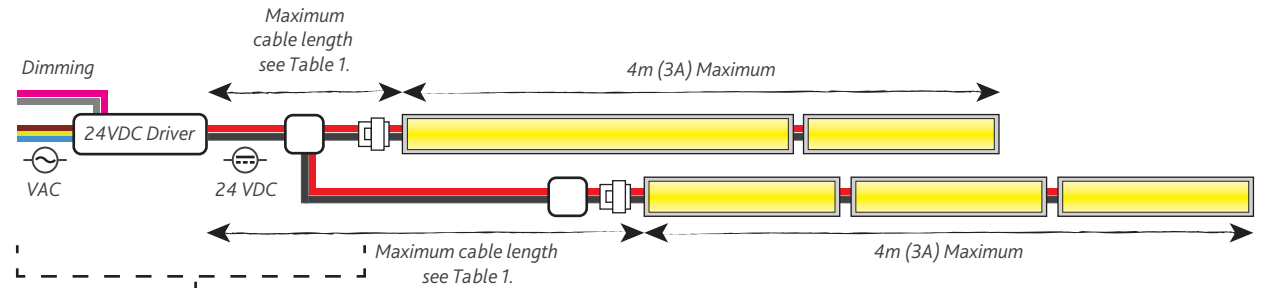
Maximum Cable Length Table 1.

LED LENGTH	CURRENT	0.5mm ²	0.75mm ²	1mm ²	1.5mm ²	2.5mm ²
< 0.5 m	< 0.2 A					
0.5 m	0.2 A	40 m				40 m max.
1 m	0.4 A	36.5 m	40 m			
1.5 m	0.6 A	21.75 m	32.75 m	40 m		
2 m	0.8 A	14.5 m	22 m	29.25 m	40 m	
2.5 m	1 A	10.25 m	15.5 m	20.75 m	30.25 m	40 m
3 m	1.2 A	7.25 m	11 m	14.75 m	21.75 m	36.25 m
3.5 m	1.4 A	5 m	7.75 m	10.25 m	15.25 m	25.25 m
4 m	1.6 A	3.25 m	5 m	6.75 m	10 m	16.75 m

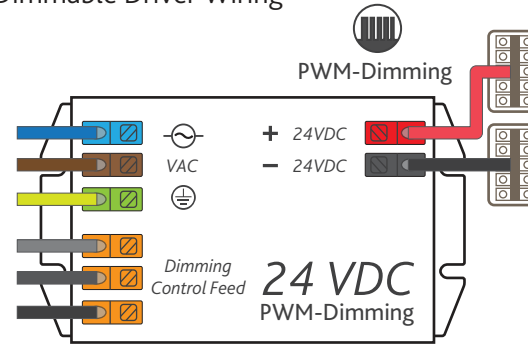


! Cable lengths are based on average resistance for typical copper cables. Cable characteristics may vary according to manufacturer, temperature, copper purity, connections etc.

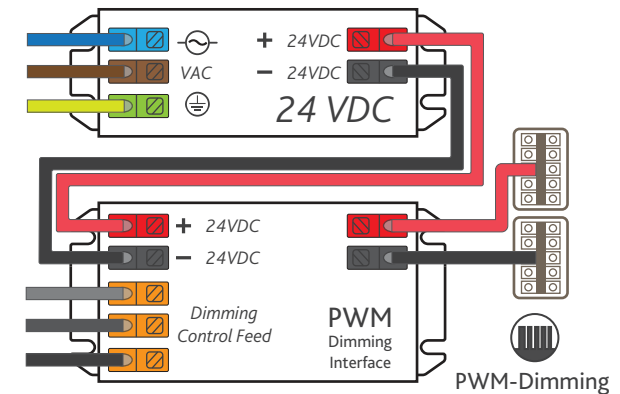
Wiring Diagram



Dimmable Driver Wiring



Driver + Dimming Interface Wiring



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USA & Canada:
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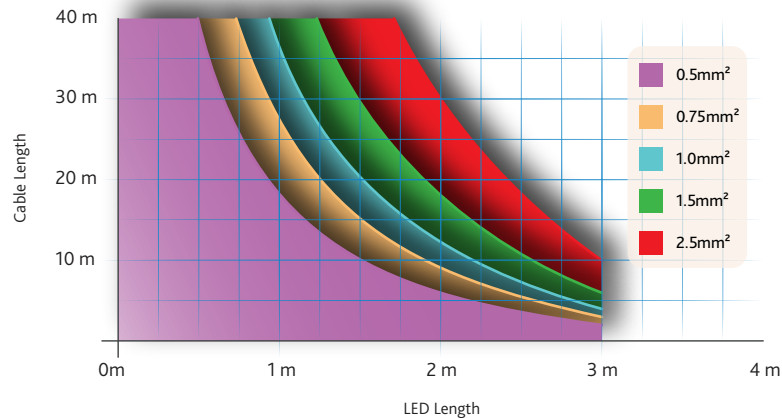
Constant voltage LED drivers can have high inrush current at power-on. Driver inrush current can be many times the normal operating current.

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- Protect the LEDs from dust and paint during installation and use.
- Plan for loads, driver locations, cables sizes etc prior to installation.
- Shielded control pair required for dimming signal wires.
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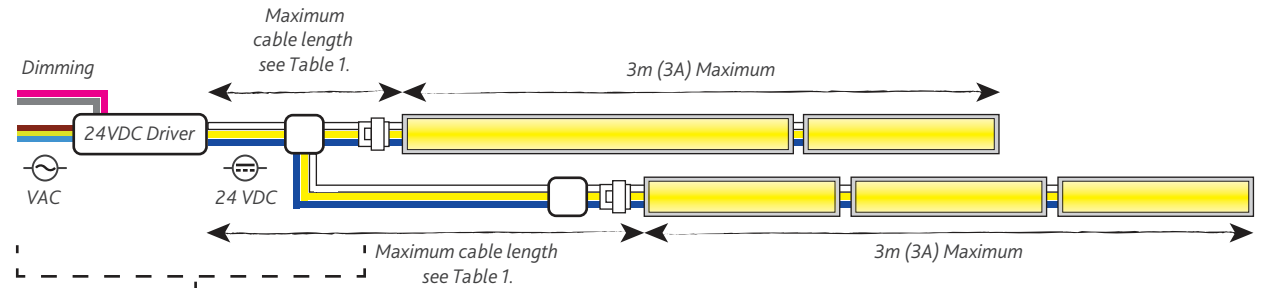
Maximum Cable Length Table 1.

LED LENGTH	CURRENT	0.5mm ²	0.75mm ²	1mm ²	1.5mm ²	2.5mm ²				
<0.5 m	< 0.5 A	40 m max.								
0.5 m	0.5 A						40 m	40 m	40 m	40 m
1 m	1 A						18.25 m	27.5 m	36.75 m	40 m
1.5 m	1.5 A						10 m	15.25 m	20.25 m	29.75 m
2 m	2 A						6 m	9.25 m	12.25 m	18 m
2.5 m	2.5 A						3.75 m	5.5 m	7.5 m	11 m
3 m	3 A						2 m	3 m	4 m	6 m

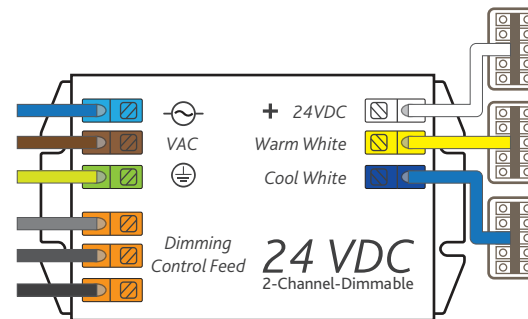


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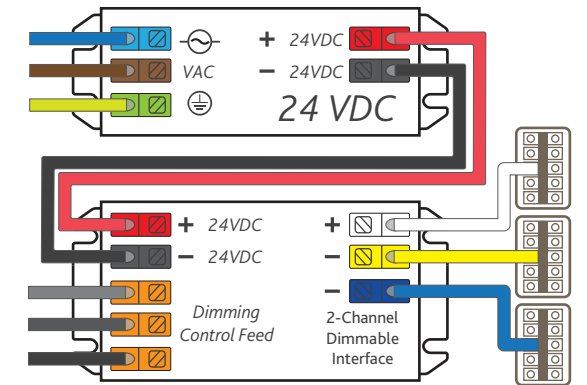
Wiring Diagram



Dimmable Driver Wiring



Driver + Dimming Interface Wiring



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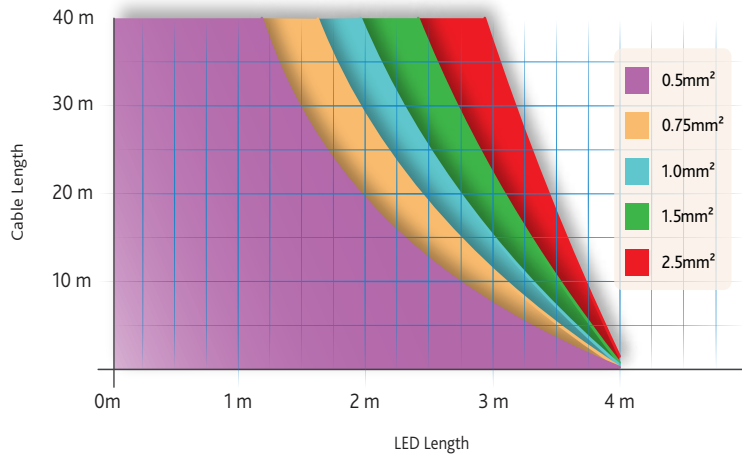
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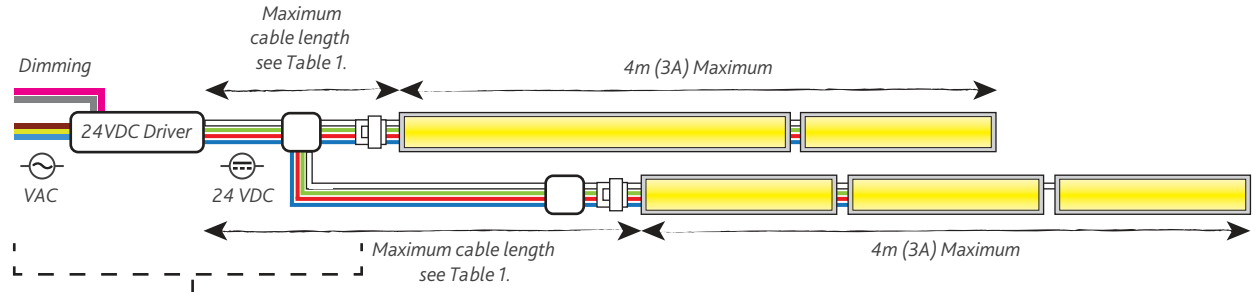
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Maximum Cable Length Table 1.

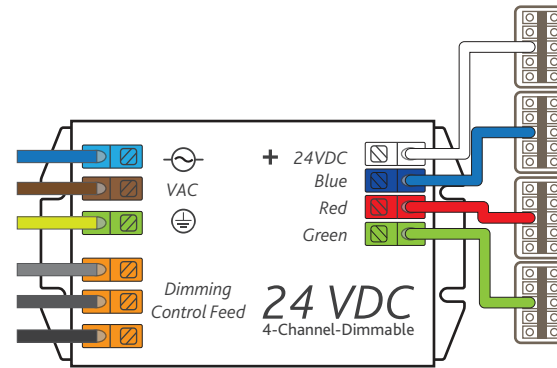
LED LENGTH	CURRENT	0.5mm ²	0.75mm ²	1mm ²	1.5mm ²	2.5mm ²
<0.5 m	< 0.3 A	40 m max.				
0.5 m	0.3 A					
1 m	0.6 A	40 m	40 m			
1.5 m	0.9 A	29.5 m	40 m	40 m		
2 m	1.2 A	19.25 m	29 m	38.75 m	40 m	
2.5 m	1.5 A	12.5 m	18.75 m	25.25 m	37 m	40 m
3 m	1.8 A	7.5 m	11.25 m	15.25 m	22.25 m	37.25 m
3.5 m	2.1 A	3.5 m	5.5 m	7.25 m	10.75 m	18 m
4 m	2.4 A	0.25 m	0.25 m	0.5 m	0.75 m	1.5 m



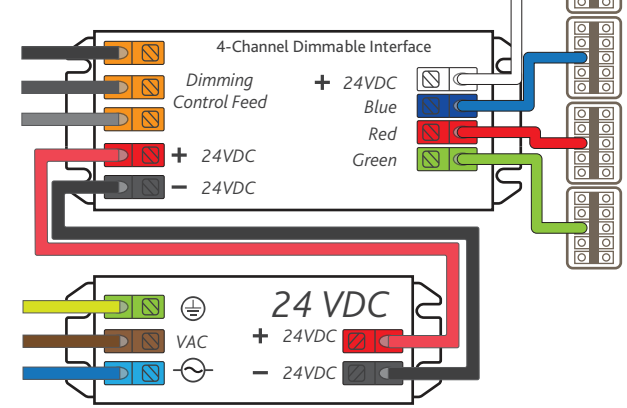
Wiring Diagram



Dimmable Driver Wiring



Driver + Dimming Interface Wiring



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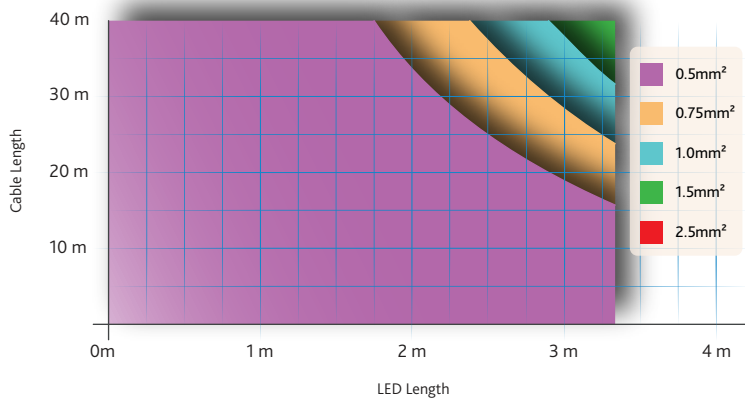
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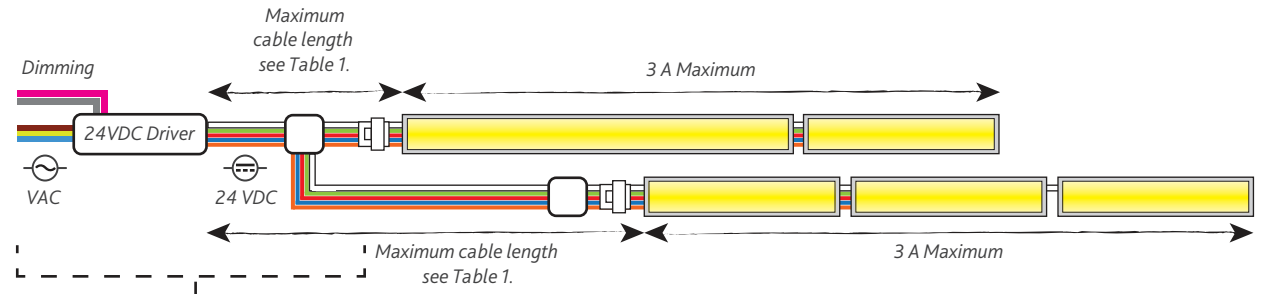
Maximum Cable Length Table 1.

LED LENGTH	CURRENT	0.5mm ²	0.75mm ²	1mm ²	1.5mm ²	2.5mm ²
<0.5 m	< 0.45 A	40 m max.				
0.5 m	0.45 A					
1 m	0.9 A					
1.5 m	1.35 A					
2 m	1.8 A	34 m	40 m			
2.5 m	2.25 A	25 m	38 m	40 m		
3 m	2.7 A	19 m	29 m	38 m		
3.3 m	3 A	16 m	24 m	32 m	40 m	40 m

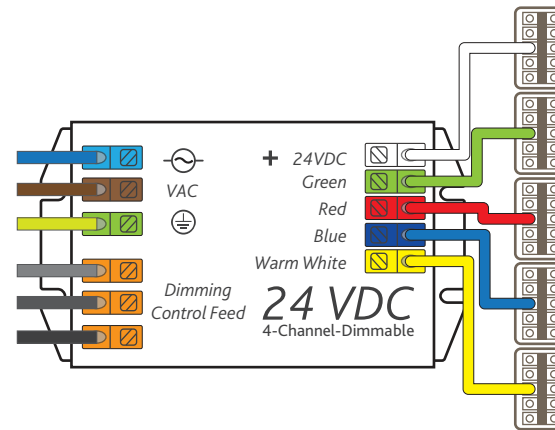


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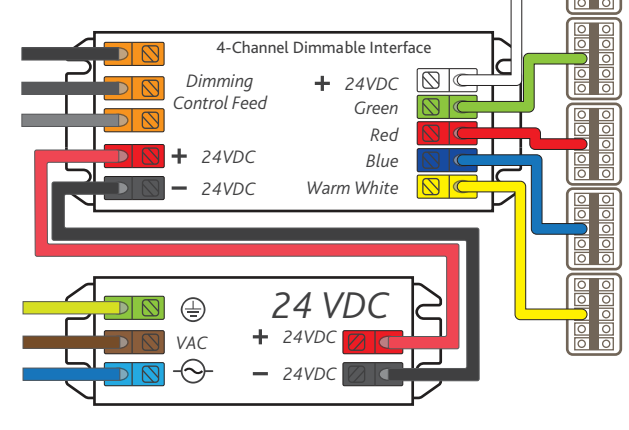
Wiring Diagram



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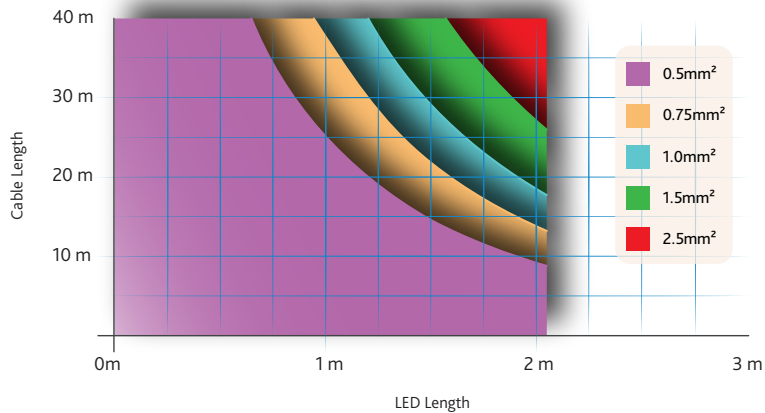
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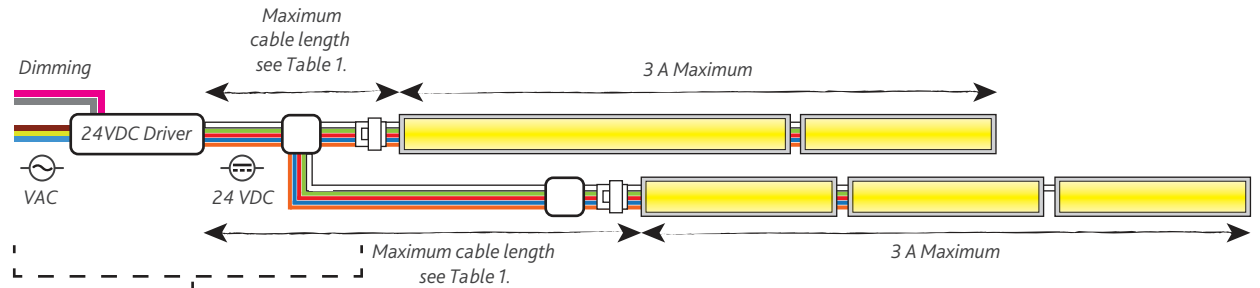
Maximum Cable Length Table 1.

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<0.5 m	< 0.7 A	40 m max.								
0.5 m	0.7 A						40 m	40 m		
1 m	1.4 A						25 m	37.5 m	40 m	
1.5 m	2.1 A						14.5 m	21.75 m	29 m	40 m
2 m	2.8 A						9 m	13.75 m	18.25 m	27 m
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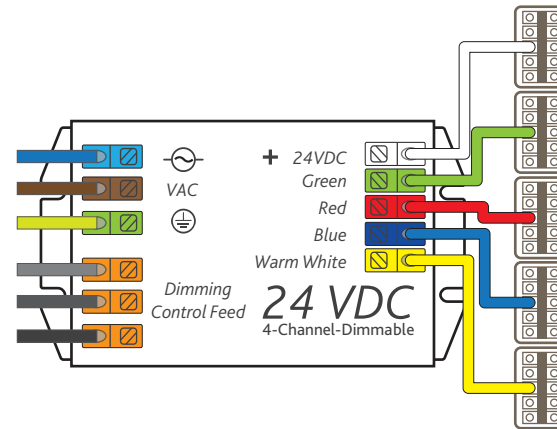


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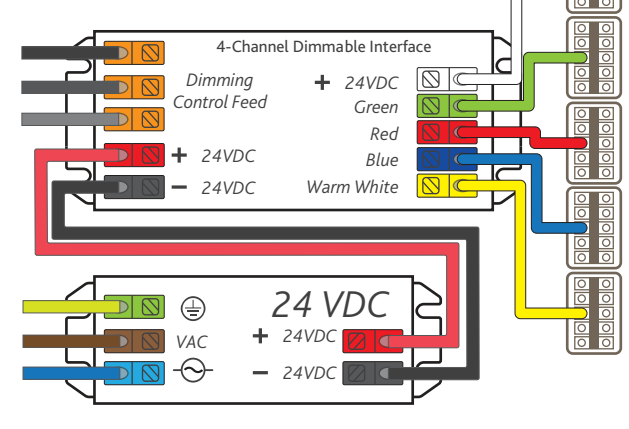
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