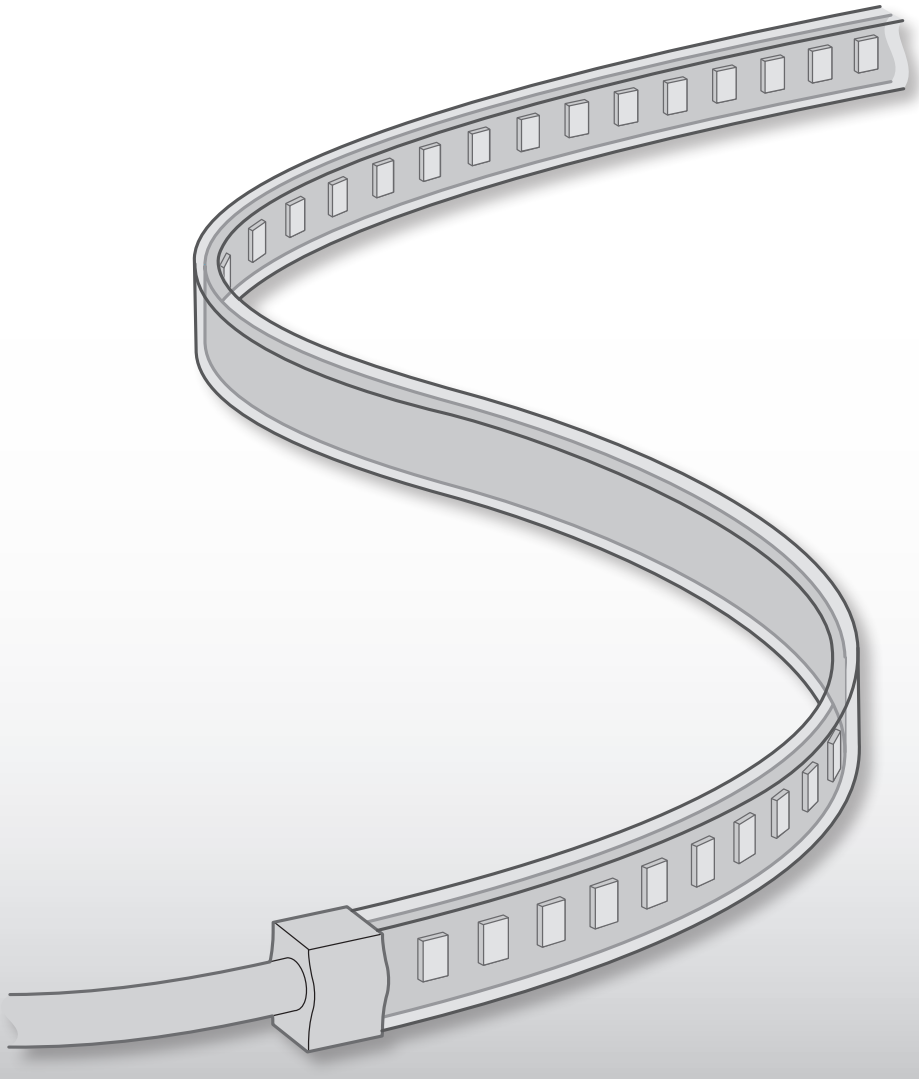
Acclaim™



Flex Eco Exterior™

User guide

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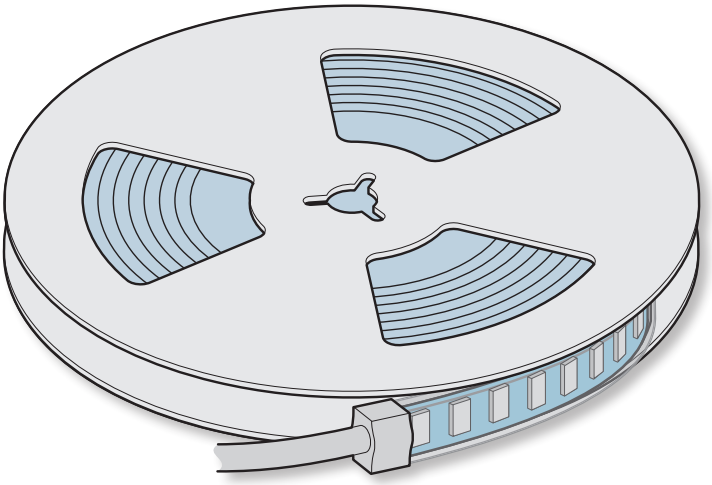
Introduction

Welcome

Welcome to the Flex Eco Exterior range from Acclaim Lighting. These ultra low power LED tapes are designed and built with ingress protection to IP68 (submersible up to 1m) and are UV stabilized to survive the elements. A range of mounting channels (see opposite page) and accessories are available to suit numerous installation situations.

Flex Eco Exterior tapes are available with a choice of single color emitters with Correlated Color Temperature (CCT) options ranging from 2400K to 4000K.



Flex Eco tapes require a 24VDC supply and dimming is supported using Pulse Width Modulation (PWM) by various optional driver units - see page 11.

Safety

- When fixtures are mounted off-ground, ensure they are securely fitted to an appropriate mounting surface.
- Ensure that the power input is supplied from a correctly fused, earthed and environmentally protected location.

Maintenance

CAUTION: Always isolate mains power before starting maintenance operations.

- Ensure that all mounting (and device) screws/bolts are fully tight and free of corrosion.
- Ensure there is no deformation to the housing, lenses or fixing points.
- Check that all power supply cables are free from physical damage or material fatigue.
- Use only genuine spare parts supplied by Acclaim Lighting.

Cleaning

- Use a moist, lint-free cloth when cleaning each fixture.
- Never use alcohol or solvents.

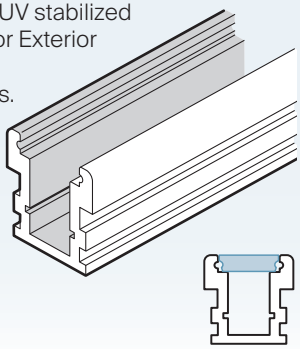
Channel types

A variety of different aluminum channels are available for mounting Flex tapes. For specification sheets and installation guides please refer to the Acclaim Lighting website:

SCAN FOR PRODUCT PAGE

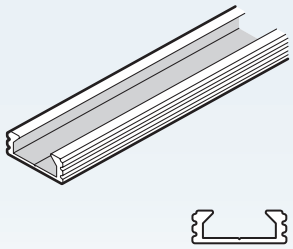
Flex exterior line channel [FLX EXL]

A walk over anodized channel with a sealable UV stabilized opal lens for Exterior in-ground installations.



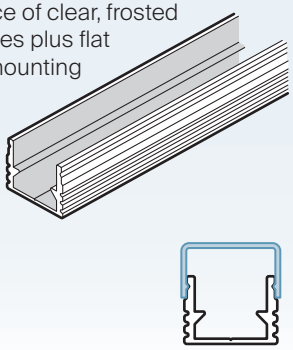
Flex channel low profile [FLX444]

A low profile channel, which can be mounted flat or at an angle using optional fixing kits.



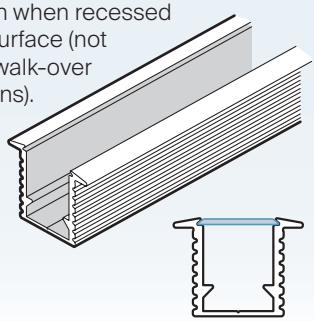
Flex channel tall profile [FLX888]

A tall sided channel to limit light spill, with a choice of clear, frosted or opal lenses plus flat or angled mounting options.



Flex channel recessed [FLX777]

A flanged deep channel with a choice of UV coated lenses to provide a neat finish when recessed within a surface (not rated for walk-over installations).



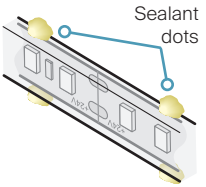
Installation

Mounting

Flex Eco Exterior tapes are fully sealed within a flexible UV stabilized silicon tube. Mounting to surfaces is usually achieved either by using the ten silicone clips (plus screws) provided or any of the optional aluminum channels or optional adhesive tapes. The recommended aluminum channels all produce an interference fit when the Flex Eco Exterior tape is fitted into them. We recommend you use Dow Corning® 799, 1199 or equivalent silicone to seal the channels against moisture ingress and also ensure all Flex Eco connections, within the channels, are fully encapsulated.

When mounting on the sides of surfaces

We recommend that you add small dots of silicone sealant along both sides of the Flex tape (to overlap the tape edge and mounting surface) using Dow Corning® 799, 1199 or equivalent. This will provide additional stability and help to prevent any separation of the tape from the mounting surface over time. The silicone dots are best applied once the tape is fixed in place; then the whole installation should not be disturbed until it the sealant has fully cured.



IMPORTANT: This product is not designed to be mounted underneath surfaces and should never be installed in this manner, even if housed within a channel. See page 6.

Cleaning the mounting surface (for adhesive tape)

Most substrates are best prepared by cleaning with a 50:50 mixture of isopropyl alcohol (IPA) and water* prior to applying the tape. Exceptions to this general procedure that may require additional surface preparation include:

Heavy oils

A degreaser or solvent-based cleaner* (such as 3M™ Prep Solvent 70, 3M™ Citrus Base Cleaner, mineral spirits, naphtha or similar, subject to suitability for the surface material) may be required to remove heavy oil or grease from a surface and should be followed by cleaning with IPA/water*.

Other contamination or oxidation

Abrading a surface, followed by cleaning with IPA/water*, can remove heavy dirt or oxidation (e.g. galvanized steel) and can increase surface area to improve adhesion. Abrasion often also helps adhesion to paints and plastics. Very small scratches in the surface, generated with circular motion rather than straight-line motion, are most desirable.

* *Note: These cleaner solutions contain greater than 250 g/l of volatile organic compounds (VOC). Please consult your local Air Quality Regulations to be sure the cleaner is compliant. When using solvents, be sure to follow the manufacturer's precautions and directions for use when handling such materials.*

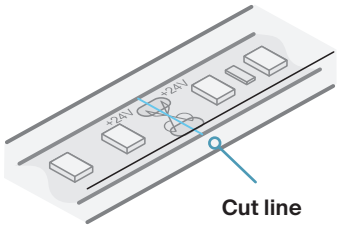
Cutting and sealing the tape

Flex Eco tapes are supplied with a one metre feed cable at one end (with bare tails).

To cut the tape

Flex Eco tapes are marked with a cut line every 3.94" (100mm) - every six LED emitters.

IMPORTANT: Do not cut the tape at any location other than the cut line. Ensure the cut is made cleanly thru the silicone outer and along the line.



To connect and seal the tape

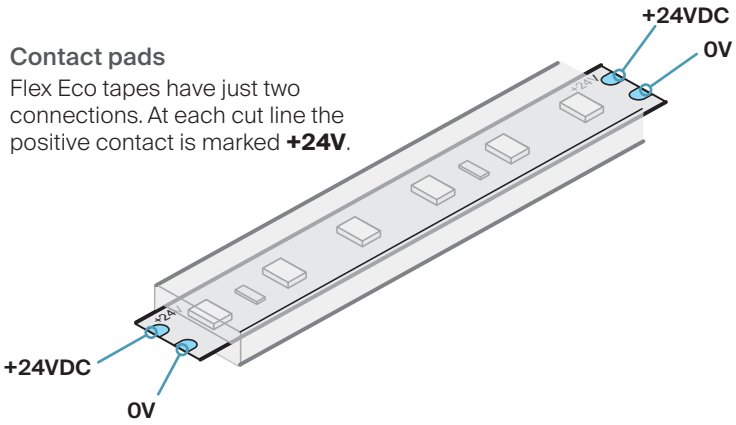
If cut to size, new tape connections can be made by soldering to the new sections. Either side of each cut line are bare copper contact pads where you can make connections by soldering feed wires.

1 After the tape has been cut, with great care use a sharp knife to cut away the silicone outer from around the contact pads. Remove small amounts of silicone at a time and take care not to cut into the tape.

2 Using a suitable soldering iron, solder your feed/link cables to the contact pads. *Note: When soldering, minimize the time spent heating the tape to avoid damage to the nearby components.*

Contact pads

Flex Eco tapes have just two connections. At each cut line the positive contact is marked **+24V**.

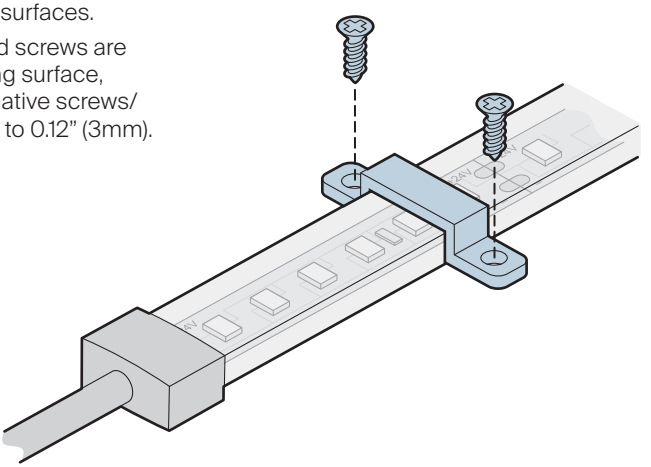


3 Use Dow Corning® 799, 1199 or equivalent silicone sealant to form a complete seal around the exposed tape, connections and cables so that water ingress is prevented. The silicone seal is best achieved once the Flex Eco is fixed in place, however, it can also be done prior to installation. Allow the sealant to fully set before disturbing the tape.

Clip mounting

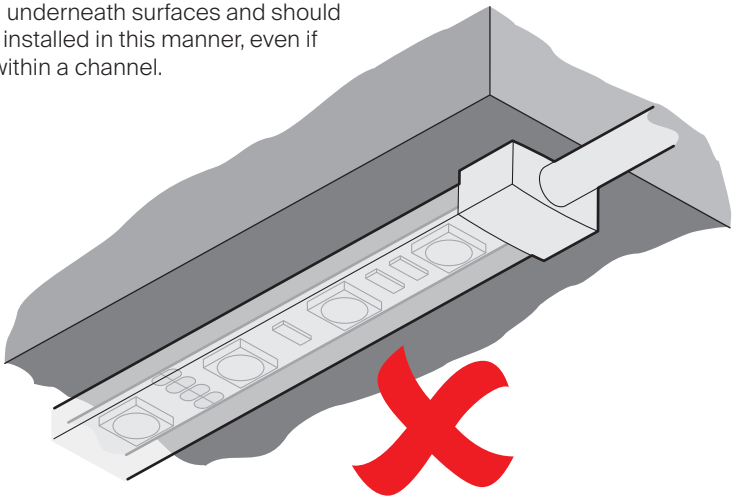
Each Flex Eco Exterior tape spool is supplied complete with ten UV stabilized silicone mounting clips and twenty wood screws (M3 x 10mm) that can be used to directly fix the tape to appropriate surfaces.

Ensure that the supplied screws are suitable for the mounting surface, otherwise source alternative screws/ bolts with diameters up to 0.12" (3mm).



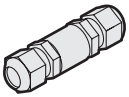
Do not mount underneath surfaces

IMPORTANT: This product is not designed to be mounted underneath surfaces and should never be installed in this manner, even if housed within a channel.

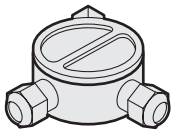


Exterior cable connections

To provide protection for Exterior cable connections and distributions, waterproof couplers and splitters are available. When used correctly, both items offer ingress protection to IP68.



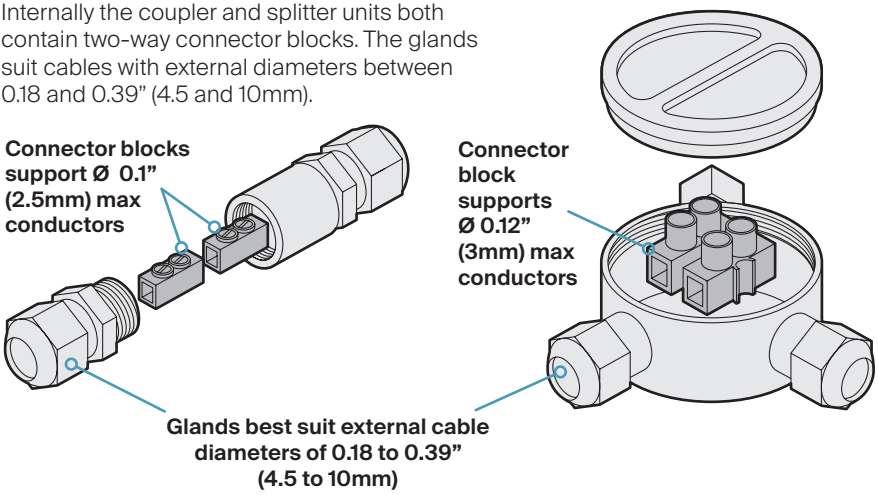
Waterproof coupler
[FLK WPC]



Waterproof splitter
[FLK WPS]

Options

Internally the coupler and splitter units both contain two-way connector blocks. The glands suit cables with external diameters between 0.18 and 0.39" (4.5 and 10mm).



Powering Flex Eco tapes

Flex Eco tapes are run at 24VDC and consume power as follows:

per foot	*per meter*	*per 16.4' (5m) spool*
• 0.97W	3.2W	16W

Note: The maximum overall tape length per run is 16.4' (5m). This is limited by the current capacity of the power buses within each tape.

Connection cables

The connection cables (not supplied) used to link Flex Eco tapes to the power/driver unit should follow these guidelines (based on a load of 0.7A for 16.4' /5m of Flex Eco tape):

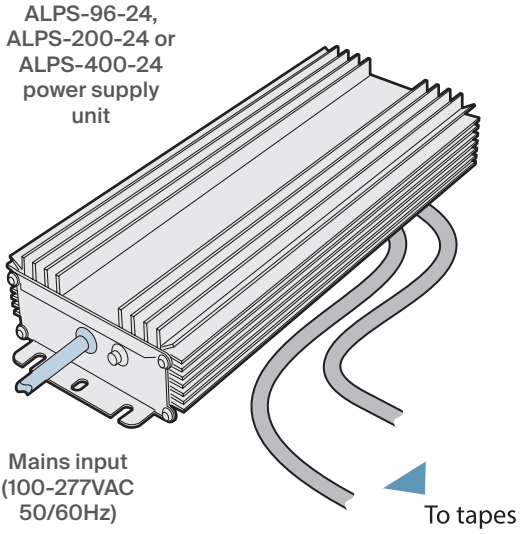
- Up to 40 feet (12m) 18 AWG (0.823mm^2)
- Up to 100 feet (30m) 14 AWG (2.081mm^2)
- Up to 180 feet (54m) 12 AWG (3.309mm^2)

In all cases, ensure the voltage drop at the fixture end of the link cable is no greater than 8% (1.92V) of the original 24VDC supply.

Connecting and controlling

Non-Dim

Use Acclaim Lighting ALPS-96-24, ALPS-200-24 or ALPS-400-24 power supplies.



ALPS-96-24:
5 spools maximum

ALPS-200-24:
12 spools maximum

ALPS-400-24:
24 spools maximum

Link cables require 2 cores.
See cable recommendations on page 7.

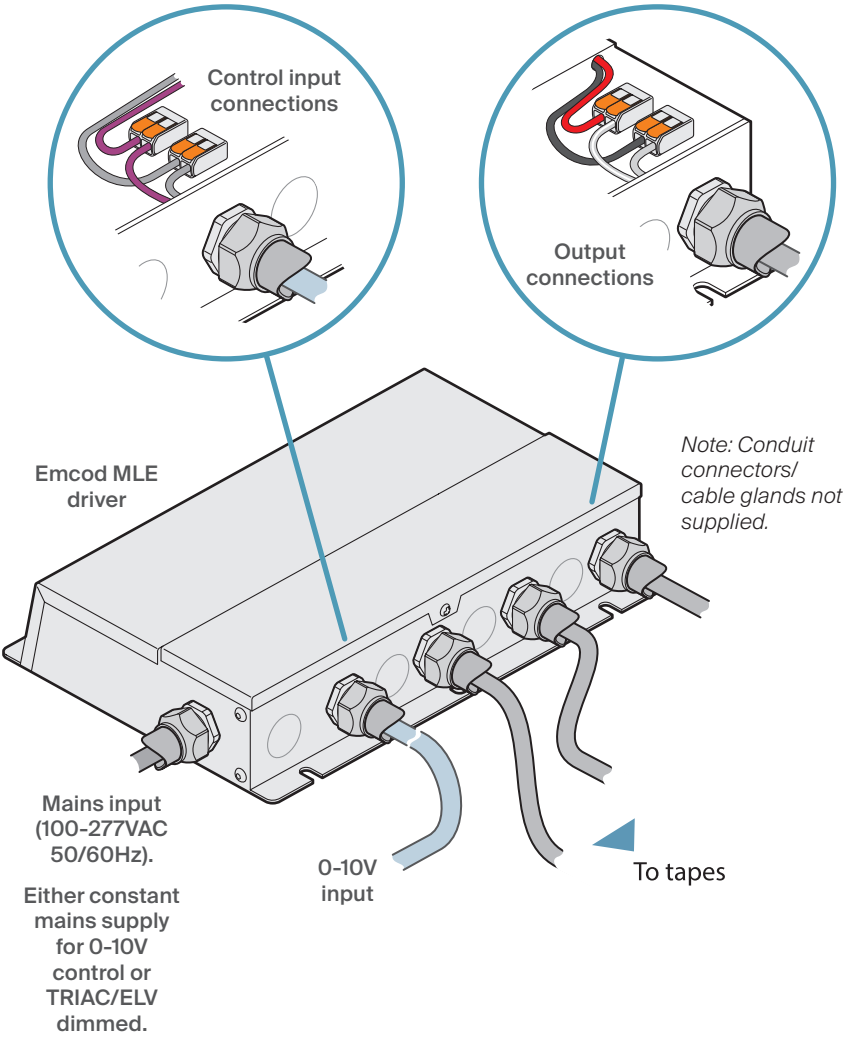
Dimmed (0-10V or TRIAC/ELV control)

These drivers provide 24VDC constant voltage PWM output in response to either a low voltage control input or dimmed mains source:

- A 0-10V (source or sink) analog dimming control input plus a constant mains supply, or
- A TRIAC (forward phase) or ELV (reverse phase) dimmed mains feed.

Link cables require 2 cores. See cable recommendations on page 7.

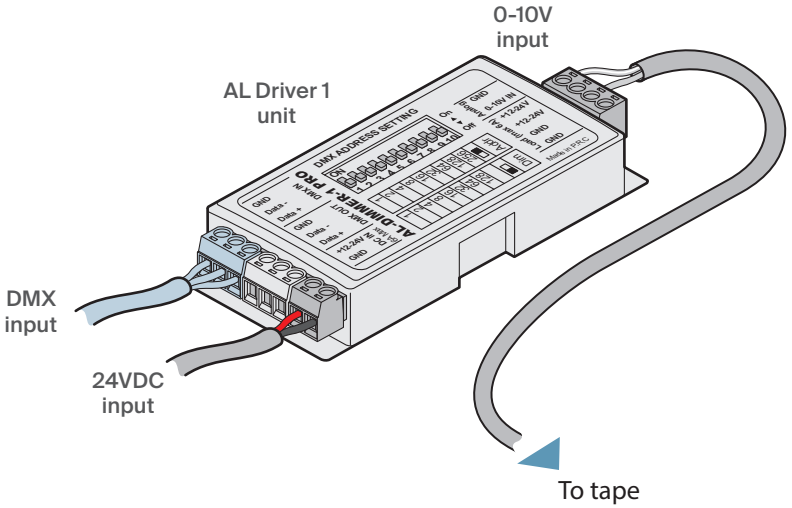
- MLE96 *[part #: MLE96-24DC-UD]* 5 spools maximum
- MLE192 *[part #: MLE192-24DC-UD]* 10 spools maximum
- MLE288 *[part #: MLE288-24DC-UD]* 15 spools maximum



Dimmed (0-10V or DMX control)

Use Acclaim Lighting AL Driver 1 [part #: ALD001] + ALPS-96-24 power supply.

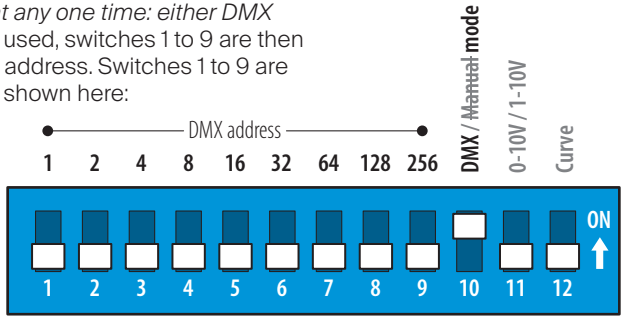
The AL Driver 1 module can controls up to two spools of paired Flex Eco), either using an external DMX digital signal, an external 0-10V/1-10V analog signal or using standalone intensity mixes. The AL Driver 1 is a constant voltage device and needs to operate from a 24VDC power supply (5A maximum).



External dimming control

To select external control, ensure that switch 10 is ON. *Note: The DMX and analog (0-10V/1-10V) inputs are both active in this mode, so it is important that only one set of inputs are connected at any one time: either DMX **OR** analog.* When DMX is used, switches 1 to 9 are then used to set the DMX start address. Switches 1 to 9 are 'weighted' with a value as shown here:

Note: Numerous apps are available to assist you with configuring the correct switch combinations for a given DMX address.



0-10V / 1-10V selection

Using switch 11, you can choose between 0-10V current source (active) [sw11-OFF] or 1-10V current sink (passive) [sw11-ON] control inputs. The primary difference between the two schemes lies with where the control voltage should be generated: ***Current source*** requires the controlling device to provide (source) the control voltage; whereas ***Current sink*** mandates that the controlled fixture must provide the voltage.

Optional curve smoothing

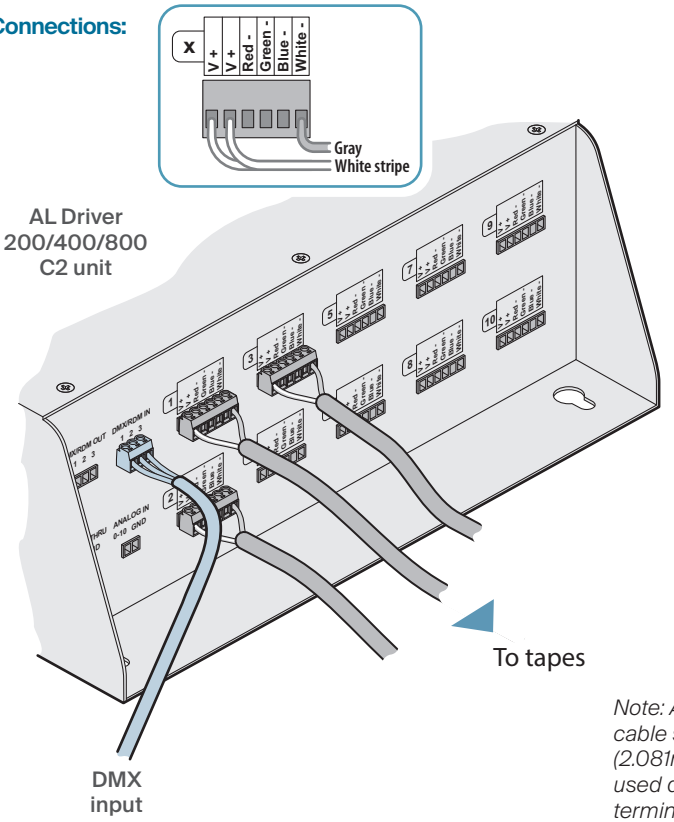
When switch 12 is set to ON, additional intermediate steps are added to the response curve to help eradicate any visible stepping between the usual 256 (8-bit) dimming levels.

Dimmed (0-10V, DALI or DMX control)

Four ports: [part #: AL Driver 200 C2]
Six ports: [part #: AL Driver 400 C2] or
Ten ports: [part #: AL Driver 800 C2].

The full size AL Drivers provide multi-channel dimming control for Flex tapes. All three models are connected and configured in similar ways; it is the number of ports and total overall current capacity that varies.

Connections:



Note: A maximum cable size of 14 AWG (2.081mm²) can be used directly within the terminal block contacts.

On all models, each port can support a maximum of **6.6A**, however, the maximum overall load across all ports must not exceed the following:

	AL Driver 200 C2	AL Driver 400 C2	AL Driver 800 C2
Maximum overall current	8A	16.5A	33A
Flex Eco	6 spools	12 spools	20 spools

Further information

Troubleshooting

No light output is visible when expected.

- Check that power is correctly applied to the fixture and that there is no damage to the power input cord.
- Check that the connections to the feed cable have the correct polarity.
- Check that the DMX address set within the driver module matches that being output by the controlling source device.

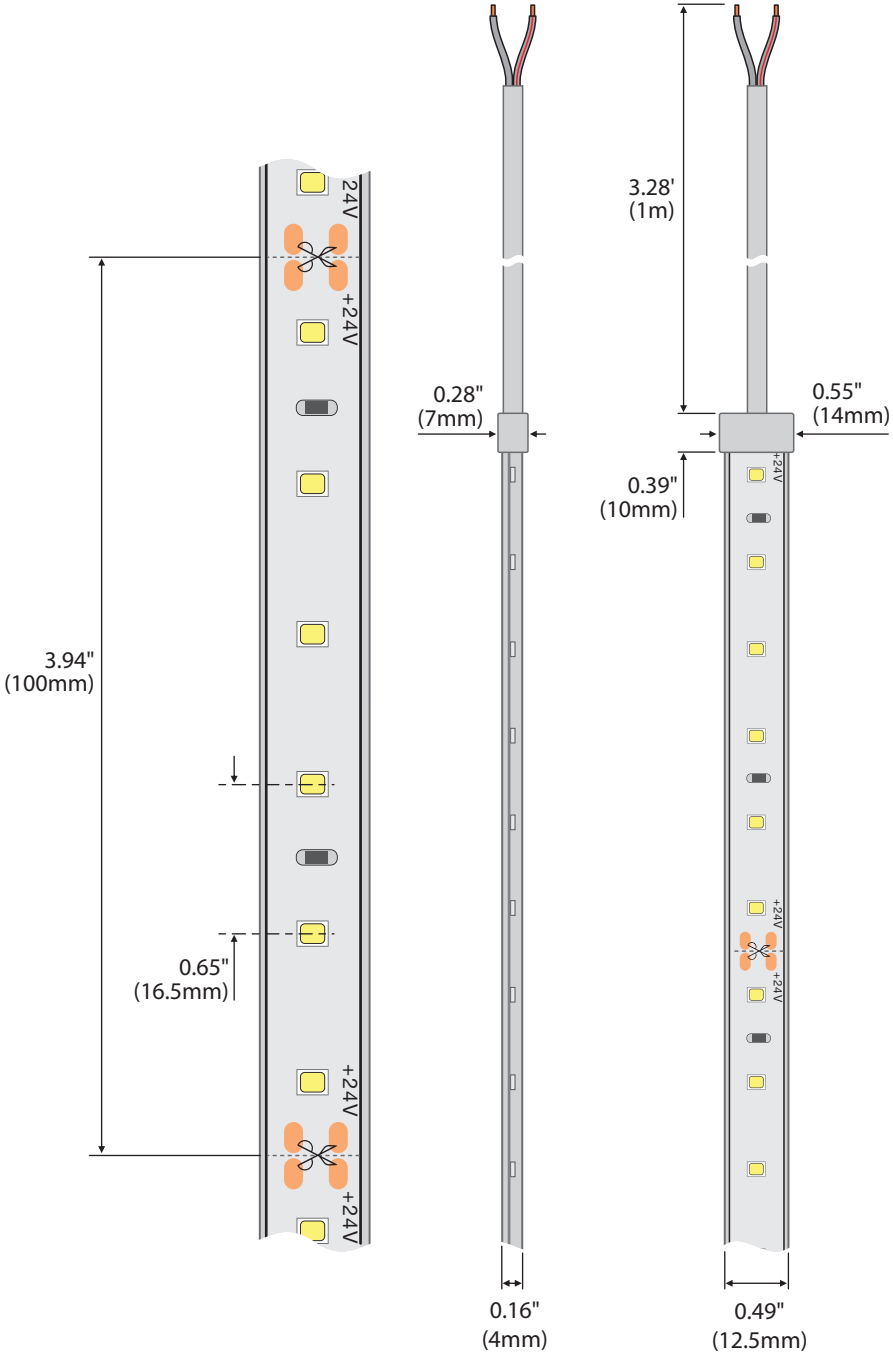
Specifications

Beam angle	120°
Color temperature (CCT)	2400K, 3000K or 4000K
Lumens	Up to 99.4 @ 4000K (1' section)
Color Rendering Index (CRI)	87.4 @ 2700K
Lumen maintenance (L_{70})	50,000 hours (25°C max)
Operating voltage	24VDC
Power consumption	See "Powering Flex Eco tapes" on page 8
Dimming control	Pulse width modulation
Maximum overall length	16.4' (5m)
Cut points	Every 3.94" (100mm)
Ingress protection	IP68*, wet location and submersible ** UL approval currently limits submersible installation to non-human occupied and freshwater locations only. All cables must be landed in environmentally suitable junction boxes.*
Impact protection	IK06 (protected up to 1 joule impact)
Dimensions (L x W x H)	16.4' x 0.49" x 0.16" 5000 x 12.5 x 4mm
Operating temperature	-40°F to 122°F -40°C to 50°C
Housing	Copper strip, silicone jacket
Certifications	

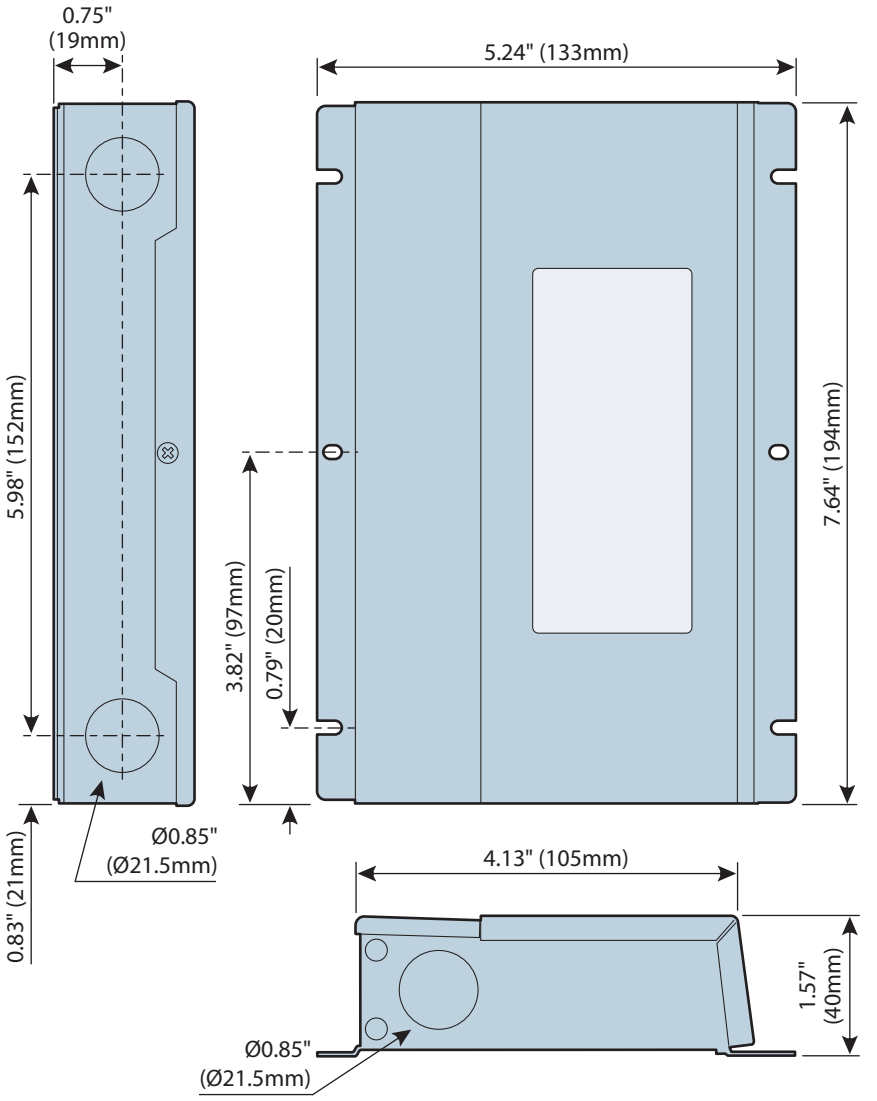
RoHS 2002/95/EC

Release 3.0a

Dimensions - Flex Eco Exterior

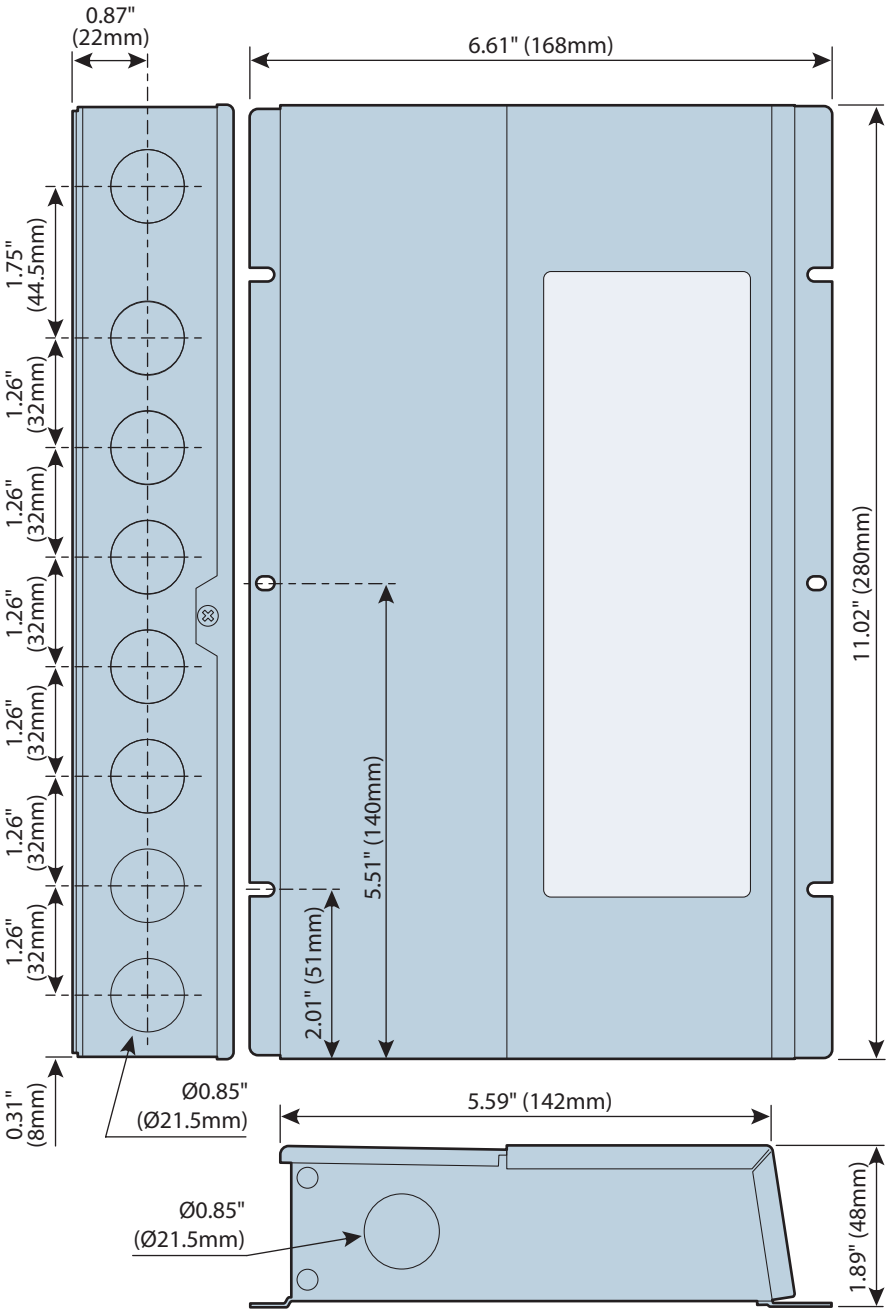


Dimensions - MLE Driver 96



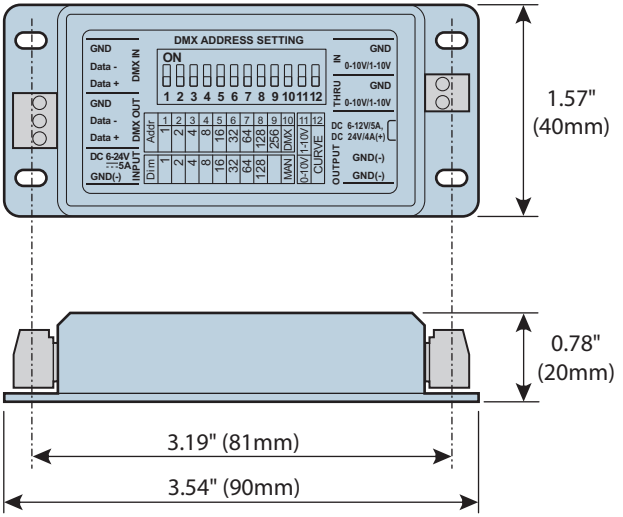
Weight: 3.1 lbs (1.4kg)

Dimensions - MLE Drivers 192 and 288



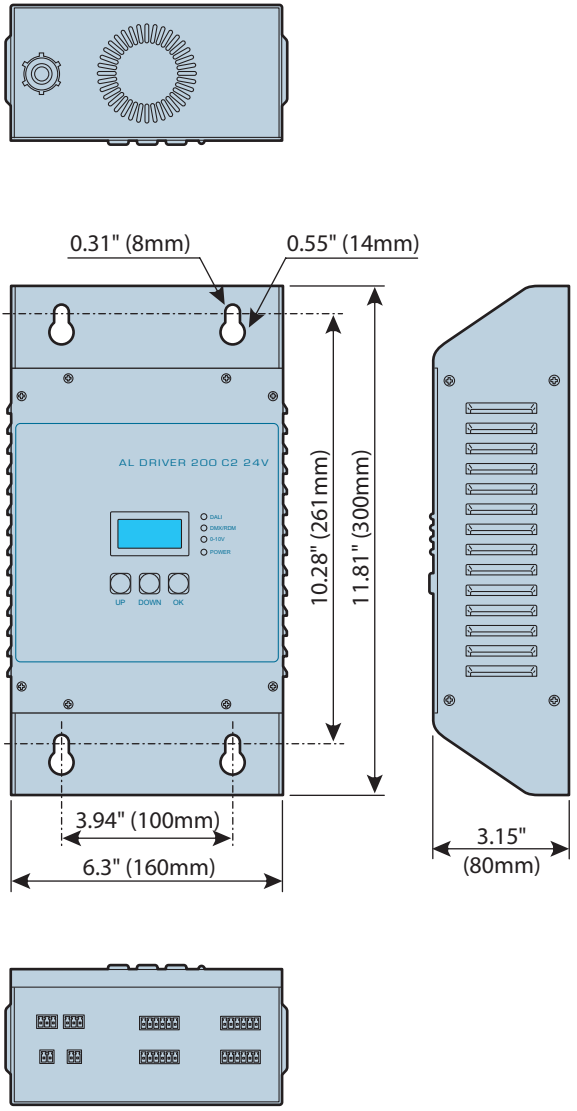
Weight (192): 5.5 lbs (2.5kg)
Weight (288): 5.7 lbs (2.6kg)

Dimensions - AL Driver 1



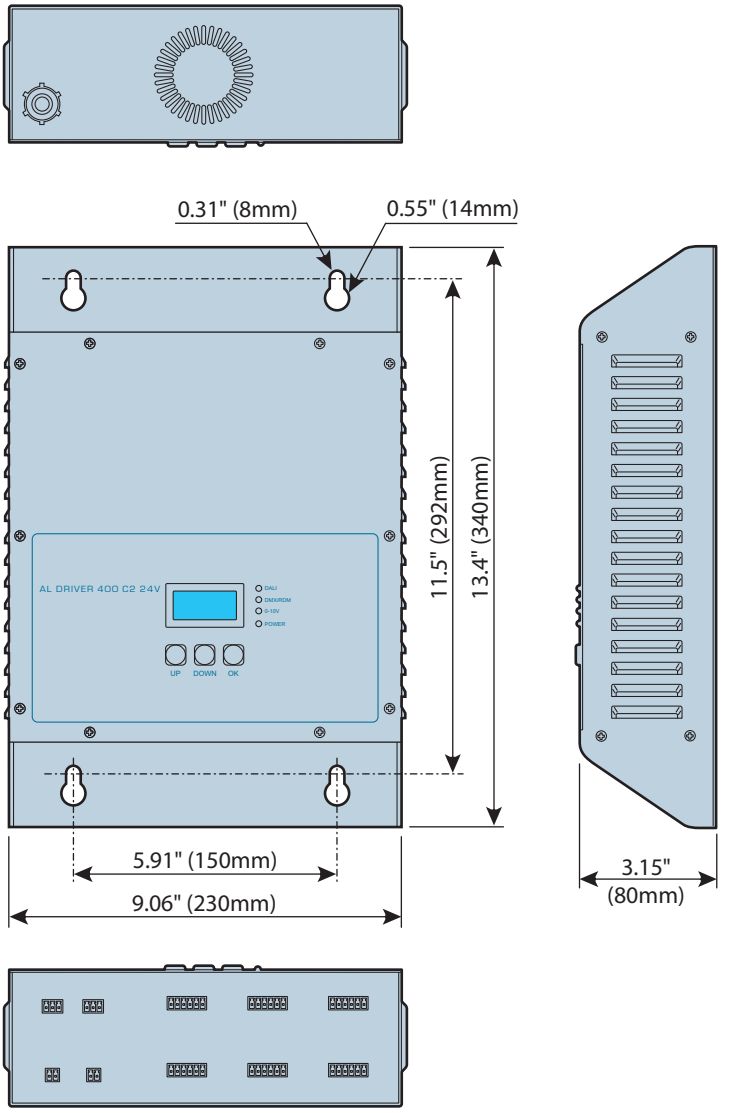
Weight: 0.1 lbs (45g)

Dimensions - AL Driver 200 C2



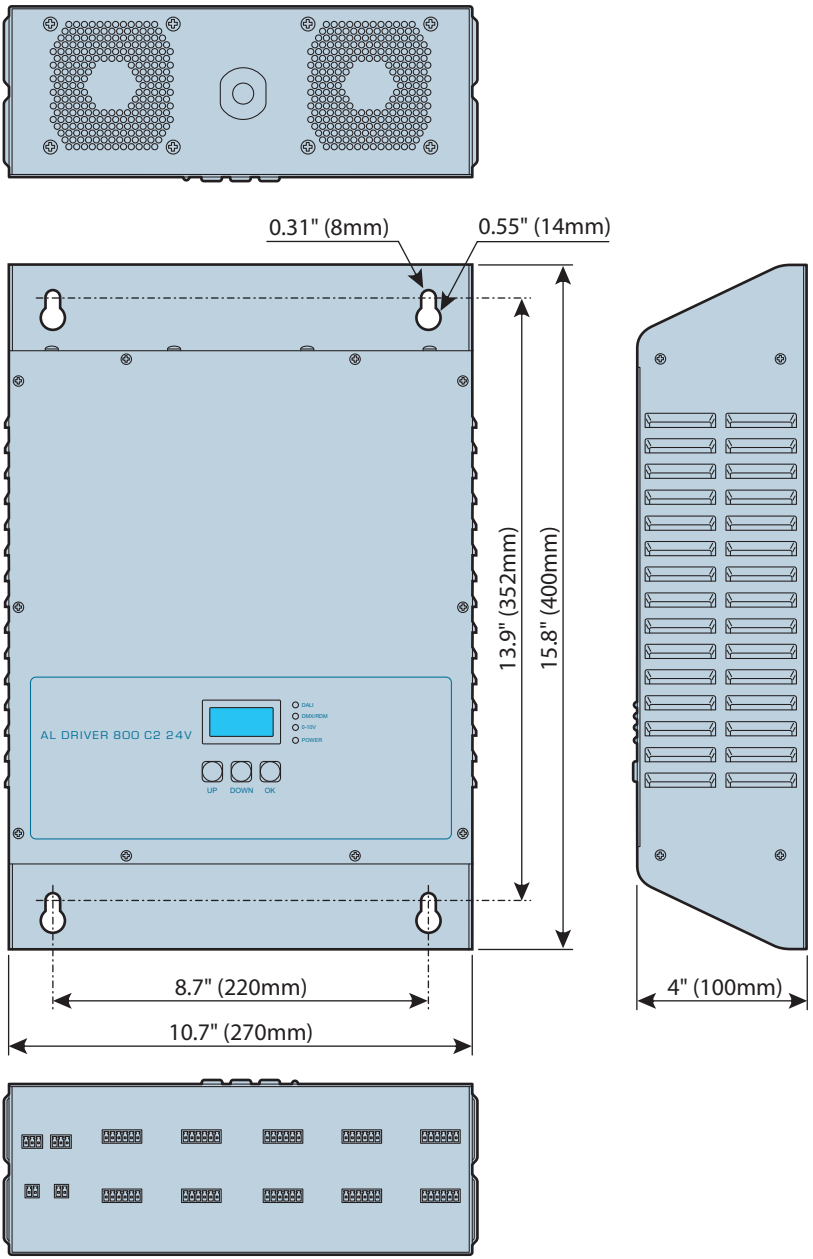
Weight: 5.29 lbs (2.4kg)

Dimensions - AL Driver 400 C2



Weight: 8.4 lbs (3.8kg)

Dimensions - AL Driver 800 C2



Weight: 12.1 lbs (5.5kg)

Limited product warranty

A. Acclaim Lighting™ hereby warrants, to the original purchaser, Acclaim Lighting finished products to be free of manufacturing defects in material and workmanship for a standard period of:

- Flex Graze: 10 years (3,652 days) from the date of purchase.
- Fixtures: 5 Years (1,825 days) from the date of purchase.
- Drivers, power supplies and accessories: 5 Years (1,825 days) from the date of purchase.
- Controllers: 2 Years (730 days) from the date of purchase.

It is the owner's responsibility to establish the date and place of purchase and warranty terms by acceptable evidence, at the time service is sought.

B. For warranty service, send the product only to the Acclaim factory. All shipping charges must be pre-paid. If the requested repairs or service (including parts replacement) are within the terms of this warranty, Acclaim Lighting will pay return shipping charges only to a designated point within the United States. If the entire instrument is sent, it must be shipped in its original package. No accessories should be shipped with the product. If any accessories are shipped with the product, Acclaim Lighting shall have no liability whatsoever for loss of or damage to any such accessories, nor for the safe return there of. Acclaim reserves the right to replace the item with same or similar product at its discretion.

C. This warranty is void if the serial number has been altered or removed; if the product is modified in any manner which Acclaim concludes, after inspection, affects the reliability of the product; if the product has been repaired or serviced by anyone other than the Acclaim Lighting factory unless prior written authorization was issued to purchaser by Acclaim Lighting; if the product is damaged because not properly maintained as set forth in the instruction manual.

D. This is not a service contract, and this warranty does not include maintenance, cleaning or periodic check-up nor do we guarantee as part of this warranty any lumen performance during period. Parts not covered by this warranty include: fuses, external power supplies, third party items not manufactures by Acclaim lighting. During the period specified above, Acclaim Lighting will replace defective parts at its expense, and will absorb all expenses for warranty service and repair labor by reason of defects in material or workmanship. The sole responsibility of Acclaim Lighting under this warranty shall be limited to the repair of the product, or replacement thereof, including parts, at the sole discretion of Acclaim Lighting. At no time will installation or re-installation or products labor or liability costs will be assumed by Acclaim Lighting. All products covered by this warranty were manufactured after January 1, 2012, and bear identifying serial number marks to that effect.

E. Acclaim Lighting reserves the right to make changes in design and/or improvements upon its products without any obligation to include these changes in any products theretofore manufactured No warranty, whether expressed or implied, is given or made with respect to any accessory supplied with products describe above. Except to the extent prohibited by applicable law, all implied warranties made by Acclaim Lighting in connection with this product, including warranties of merchantability or fitness, are limited in duration to the warranty period set forth above. And no warranties, whether expressed or implied, including warranties of merchantability or fitness, shall apply to this product after said period has expired.

F. Marine or extreme weather location applications using Acclaim lighting products are subject to a 2 year limited warranty and Acclaim must be notified prior to delivery of units for such applications so that preventative treatment can be made to the products to ensure proper performance and product life with a special marine code coating / sealing process at an additional cost.

G. The consumer's and or dealer's sole remedy shall be such repair or replacement as is expressly provide above; and under no circumstances shall Acclaim Lighting be liable for any loss or damage, direct or consequential, arising out of the use of, or inability to use, this product. This warranty is the only written warranty applicable to Acclaim Lighting products and supersedes all prior warranties and written descriptions of warranty terms and conditions heretofore published.

www.acclaimlighting.com