

Flex Tube [SC, DW and Spectrum]
GEN 2

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INTRODUCTION

WELCOME

Welcome to the Flex Tube Gen 2 range from Acclaim Lighting. These compact and flexible LED powered strips produce a greatly homogenized light output along their full length to provide a viable alternative to other linear light sources, such as neon or cold cathode. Designed from the outset for external applications, Flex Tube strips are rated to IP68 and are built to order, in lengths ranging up to 22.96 feet (7m) - for Spectrum models the maximum length is 19.6 feet (6m).

In addition to the length, models are categorized by three core options:

- The axis in which the tube can be curved,
- The direction of entry for the power feed, and
- The color of the LED emitters:
 - White: 2200K, 2700K, 3000K, 3500K, 4000K or 5700K
 - ◇ Red
 - ◇ Green
 - ◇ Blue
 - ◇ Amber
 - ◇ Dynamic white (2200K to 5700K) - DW models
 - ◇ RGBW (W=3000K or 4000K) - Spectrum models

Please see page 3 for option details.

A range of dimming driver and static power supply options are available from Acclaim Lighting. See the section "Connecting and controlling Flex Tubes" on page 11 and also www.acclaimlighting.com for further details.

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

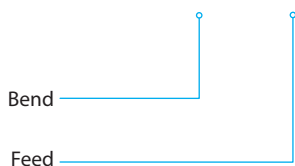
- Use a moist, lint-free cloth when cleaning each fixture.
- Never use alcohol or solvents.

BENDS, FEEDS AND COLORS

Flex Tube strips are available with two bend options, four choices of power feed and multiple LED emitter colors, which can be mixed in any combination to suit your installation.

The overall order code is arranged as follows:

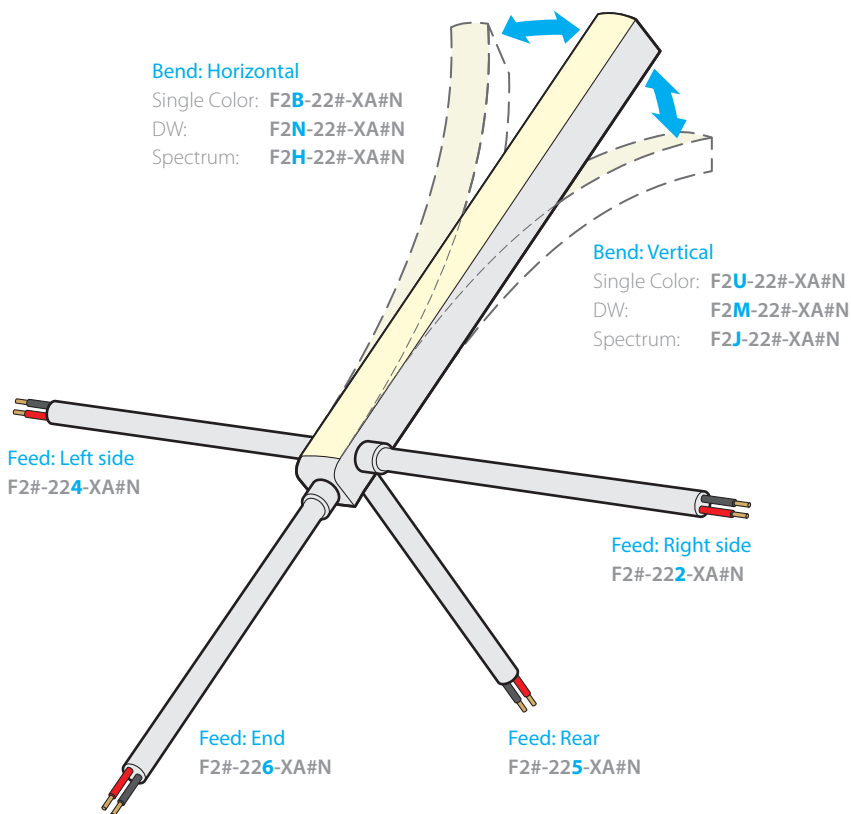
F2#-22#-XA#N



- LED emitter color:
- B** 2200K
 - D** 2700K
 - E** 3000K
 - F** 3500K
 - G** 4000K
 - J** 5700K
 - M** Red
 - N** Green
 - O** Blue
 - P** Amber
 - Q** RGBW (W=3000K)¹
 - R** RGBW (W=4000K)¹
 - X** DW (2200 to 5700K)²

All listed color options are for SC models except:
¹(Spectrum) and
²(Dynamic White).

The bend and feed options affect the order code as follows:



INSTALLATION

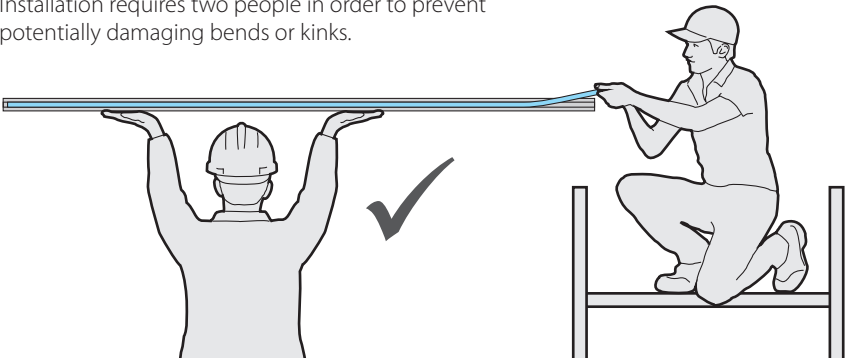
TAKE GREAT CARE TO AVOID DAMAGE DURING INSTALLATION

Flex Tubes will provide many years of reliable service, however, they contain delicate components which are prone to damage if handled incorrectly or treated roughly. Please read and follow all of the directions given on these four pages before attempting to install any Flex Tube:

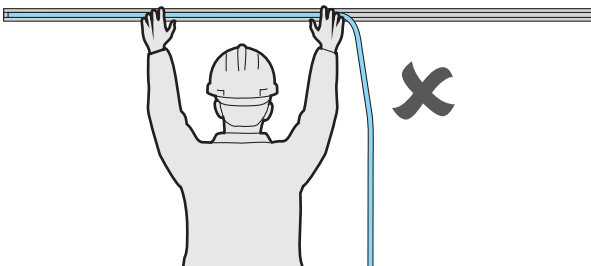
- **Two person install** - see below.
- **Unpacking** - see page 5.
- **Bending Flex Tubes** - see page 6.
- **Cable care** - see page 7.

TWO PERSON INSTALL

- Installation requires two people in order to prevent potentially damaging bends or kinks.



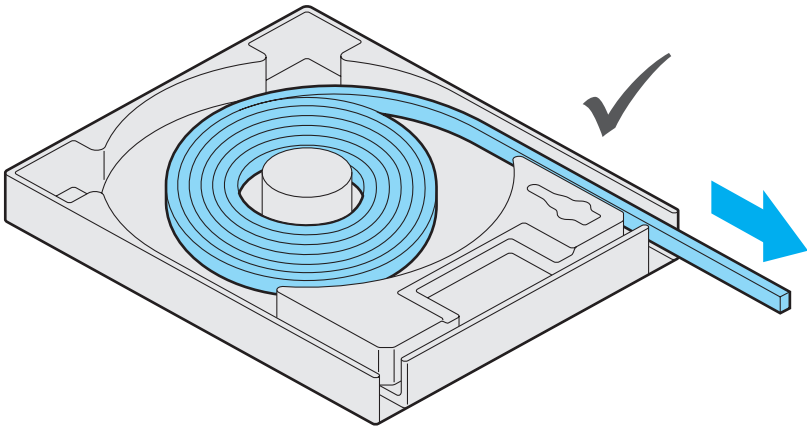
- Do not attempt to install Flex Tube into the mount channel alone or allow the Flex Tube to bend in the opposite plane from the intended vertical or horizontal curve (model dependent).



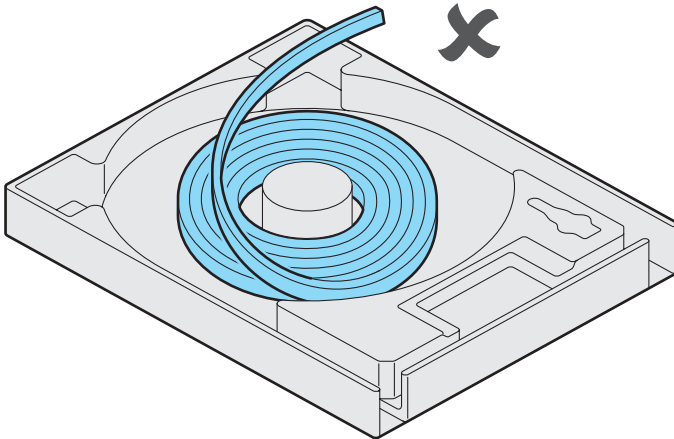
UNPACKING

CAUTION: Each Flex Tube contains a delicate LED emitter tape which is designed to bend in one plane only (model dependent). Always take great care to avoid twists and kinks or bends in the opposite plane from the intended vertical or horizontal curvature. Damage can be caused by incorrect handling, resulting in a failed product.

- When unpacking from the supplied box, always extract the Flex Tube by carefully pulling it out through the intended box opening:



- Never pull the Flex Tube up from the coil:



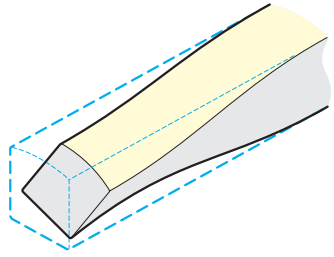
- Keep the Flex Tube as straight as possible prior to installing into the mount channel.
- Never bend the Flex Tube more than 15° from straight (in the opposite plane from the intended vertical or horizontal curve - model dependent).
- Installation requires two people in order to prevent potentially damaging bends or kinks. See "Two person install" on page 4.

BENDING FLEX TUBES

Flex Tubes are designed to be bent in one axis only - to a minimum bend radius of 5.9" (150mm):

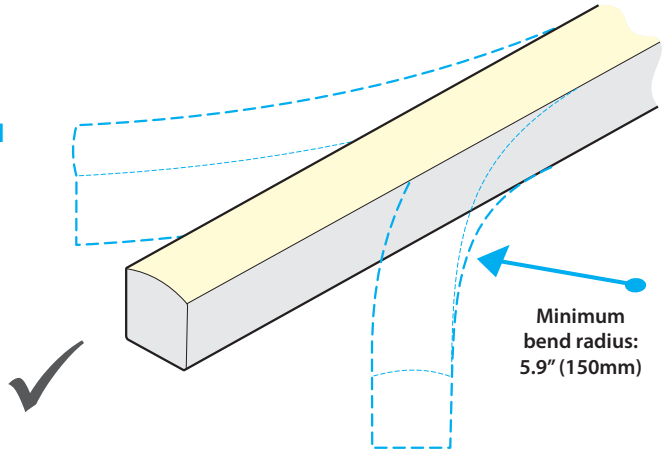
IMPORTANT

Do not twist; or bend in the wrong direction. Damage will be caused to the internal circuitry.



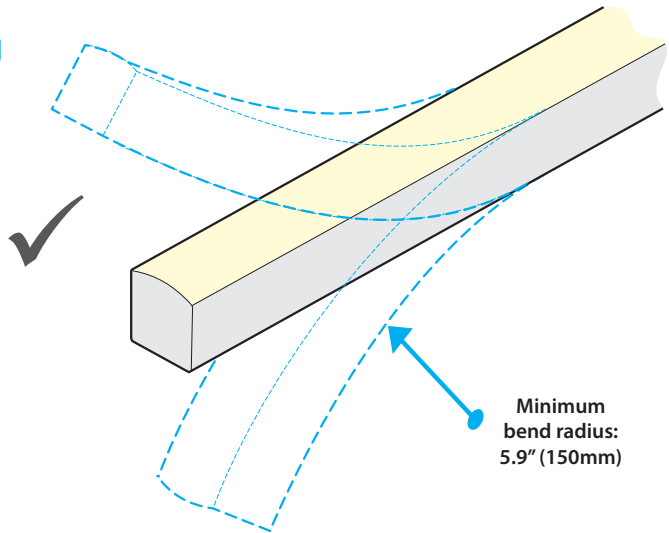
F2B, F2N & F2H MODELS

Horizontal bend only



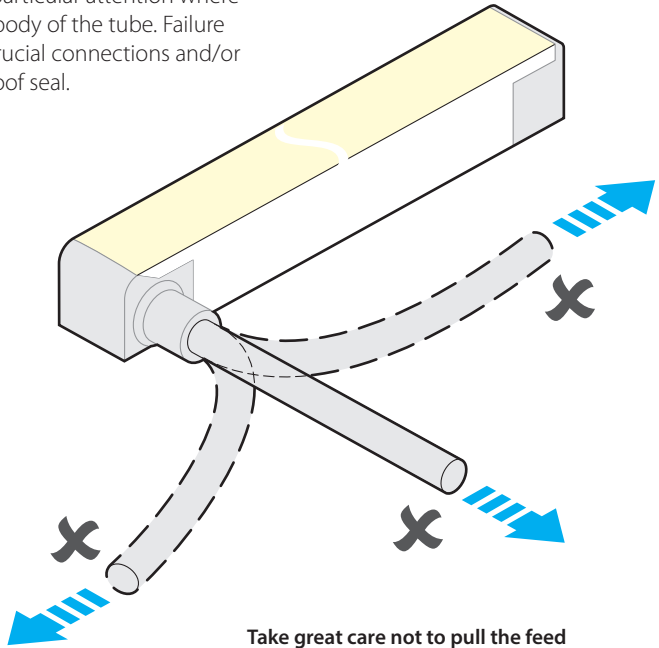
F2U, F2M & F2J MODELS

Vertical bend only



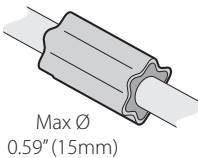
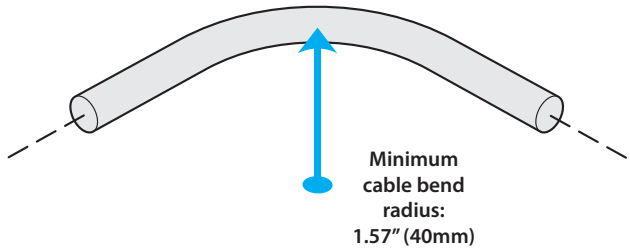
CABLE CARE

Treat the Flex Tube feed cable with care to avoid damage. Please pay particular attention where the cable enters the body of the tube. Failure to do so may break crucial connections and/or damage the waterproof seal.



Take great care not to pull the feed cable outward from the tube or bend it sharply in any direction.

Do not subject the feed cable to a bend radius less than 1.57" (40mm) anywhere along its length.



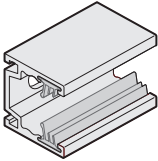
Note: Each feed cable has a metal-encased joint roughly 5" (130mm) from the inlet, which must not be removed.

MOUNTING CHANNEL KITS

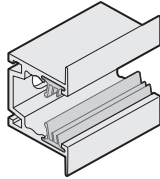
SURFACE AND RECESSED

These kits are used to mount Flex Tube strips onto/into solid surfaces.

KIT CONTENTS



Mounting channel
(0.79"/20mm, 3.28'/1m or
6.56'/2m lengths)



Recessed mounting
channel (0.79"/20mm,
3.28'/1m or 6.56'/2m
lengths)



Self-tapping
mount screw(s)
x1, 5 or 10 (depending
on channel length)

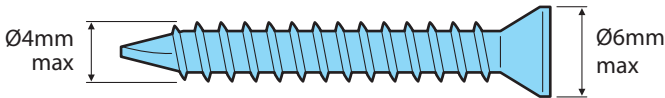
See "Mounting
channels - surface
and recessed" on
page 19

TO USE A MOUNTING CHANNEL KIT

1 Use appropriate screws and fixings for the intended mounting surface.

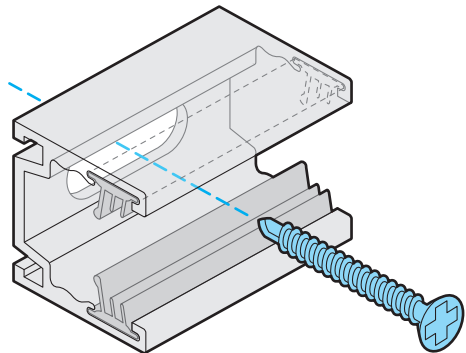
Each channel is supplied with an appropriate number of countersunk self-tapping screws; these (M3.5 x 25) screws are best suited to mounting on wooden or metal plate surfaces. The supplied screw(s) may also be suitable for other surfaces in combination with wall plugs.

If you need to source alternative screws, be aware that the limited space within the mount channel restricts the screws used to the following dimensions:



2 Attach the mount channel to the intended surface, taking all appropriate precautions as you do so.

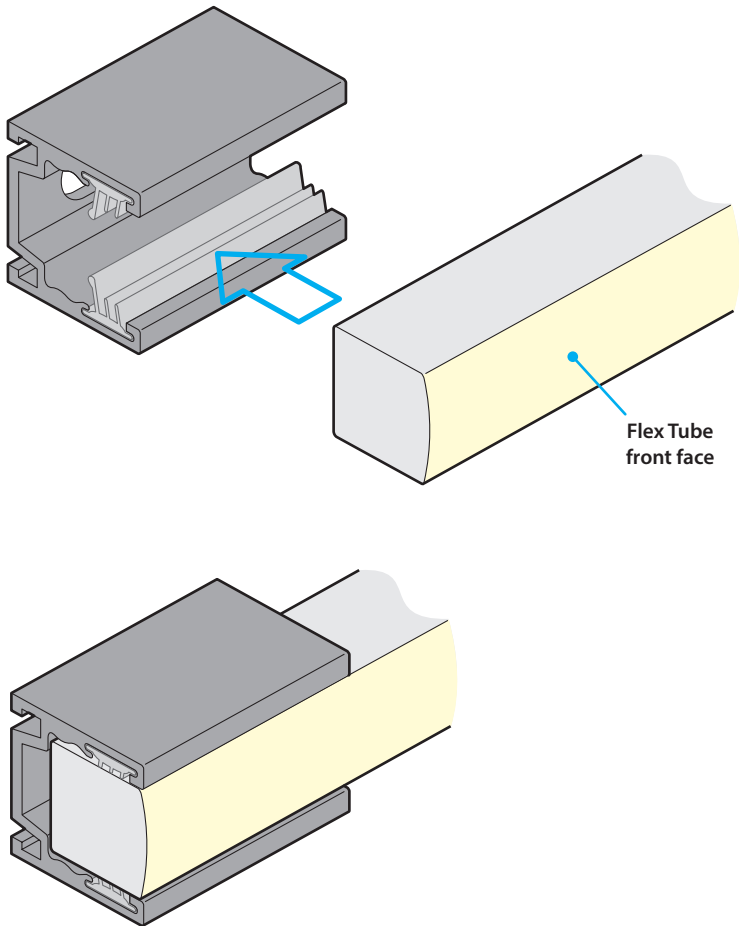
- 0.79" (20mm) mounts have one slotted hole,
- 3.28' (1 meter) mounts have five slotted holes, spaced 7.87" (200mm) apart,
- 6.56' (2 meter) mounts have ten slotted holes, spaced 7.87" (200mm) apart.



continued

- 3 Push the Flex Tube (front face outwards) fully into the mount channel until it engages with the silicone seals.

Note: To further aid long term stability - If mounting inverted or vertically, we recommend that you add dots of silicone sealant (Dow Corning® 799, 1199 or equivalent) at regular intervals between the sides of the Flex Tube and the inside faces of the mounting channel as it is pushed into place.

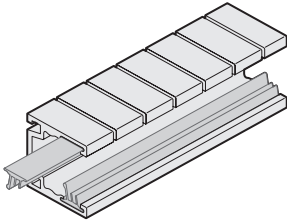


- If you should need to remove the Flex Tube, gently pull it out from the mount channel, taking care not to twist the strip.

FLEXIBLE

This kit is used to support Flex Tube strips (with horizontal bend profiles) so that they can be formed into curved shapes.

KIT CONTENTS



Flexible mounting channel
(1.6'/0.5m or 3.28'/1m lengths)



Self-tapping
mount screw(s)
(dependant on channel
length)

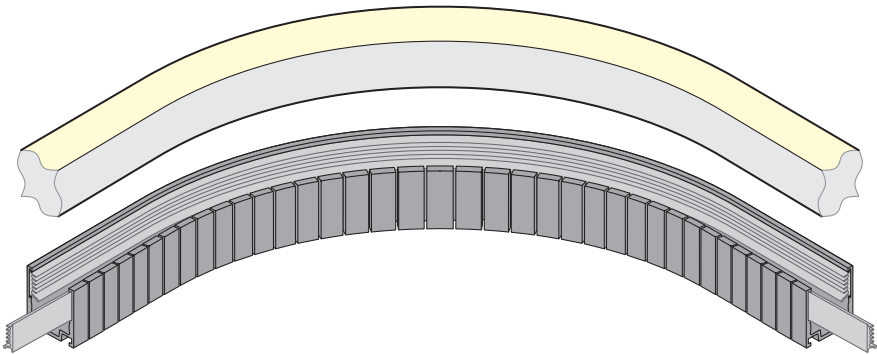
See "Mounting channels -
flexible" on page 20

TO USE A FLEXIBLE MOUNTING CHANNEL KIT

- 1 Use appropriate screws and fixings for the intended mounting surface.

Each channel is supplied with an appropriate number of countersunk self-tapping screws; these (M3.5 x 25) screws are best suited to mounting on wooden or metal plate surfaces. The supplied screw(s) may also be suitable for other surfaces in combination with wall plugs (see page 8). Mounting holes are spaced every 4.57" (116mm) - on every tenth segment.

- 2 Attach the mount channel to the intended surface to carefully form the required shape, taking all appropriate precautions as you do so. As bends are applied to the channel, ensure that the silicone seal on the segmented side is free to move along the channel. The silicone seal on that side has an excess length to allow it to adapt to the formed shape. Once the channel is fixed in place, the excess silicone seal at each end can be trimmed to size. Observe the minimum bend radius of 5.9" (150mm) for the Flex Tube.



- 3 Push the Flex Tube (front face outwards) fully into the mount channel until it engages with the silicone seals.

Note: To further aid long term stability - If mounting inverted or vertically, we recommend that you add dots of silicone sealant (Dow Corning® 799, 1199 or equivalent) at regular intervals between the sides of the Flex Tube and the inside faces of the mounting channel as it is pushed into place.

CONNECTING AND CONTROLLING FLEX TUBES

Flex Tube strips operate at 24VDC and each strip is supplied with an injection molded 16.4' (5m) feed cable with bare tails. See page 17 for full power requirements.

LINK CABLE GUIDELINES

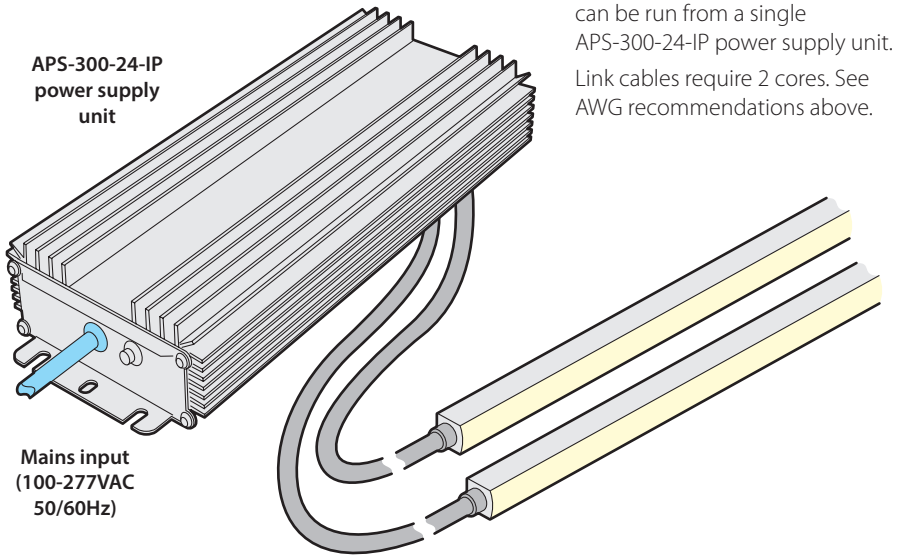
Connection cables (not supplied) used to link Flex Tubes to the power/driver unit should follow these guidelines:

- Up to 40 feet (12m) 18 AWG (0.823mm²)
- Up to 100 feet (30.5m) 14 AWG (2.081mm²)
- Up to 180 feet (55m) 12 AWG (3.309mm²)

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

FLEX TUBE SC - NON-DIM

Use Acclaim Lighting APS-300-24-IP 24V power supply.



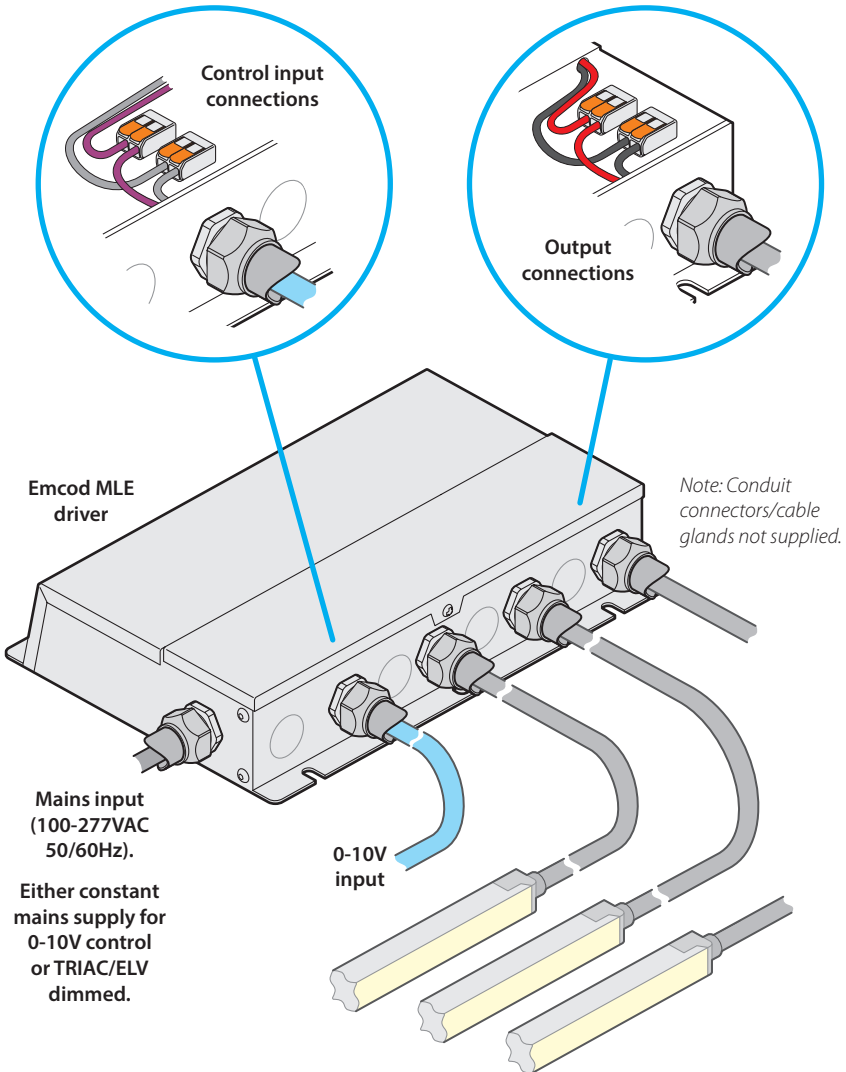
FLEX TUBE SC - DIMMED (0-10V OR TRIAC/ELV CONTROL)

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 11. A maximum of 23' (7m) can be driven per output line on each MLE driver:

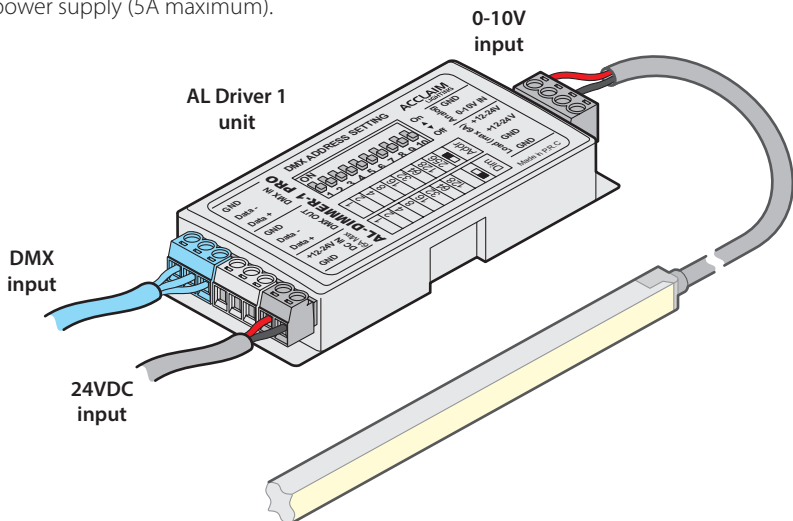
- MLE96 [part #: MLE96-24DC-UD] 1 x 23' (7m) maximum
- MLE192 [part #: MLE192-24DC-UD] 2 x 23' (7m) maximum
- MLE288 [part #: MLE288-24DC-UD] 3 x 23' (7m) maximum



FLEX TUBE SC - DIMMED (0-10V OR DMX CONTROL)

Use Acclaim Lighting AL Driver 1 [part #: ALD001] + APS-300-24-IP 24V power supply.

The AL Driver 1 module controls one spool of Flex Tube, either under control of 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).

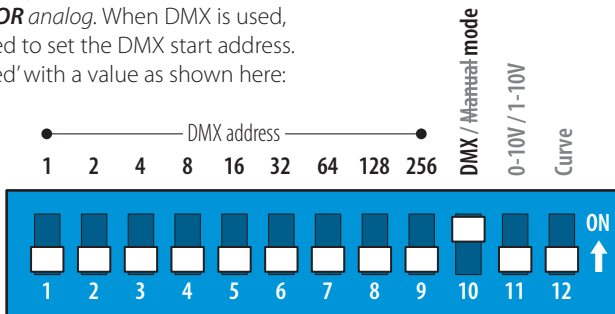


EXTERNAL DIMMING CONTROL

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.

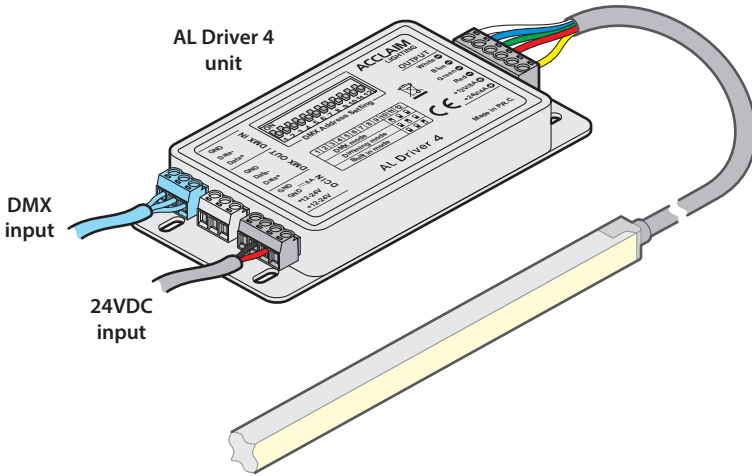
OPTIONAL CURVE SMOOTHING

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.

FLEX TUBE SPECTRUM - DIMMED (DMX CONTROL)

Use Acclaim Lighting AL Driver 4 [part #: ALD004] + APS-300-24-IP 24V power supply.

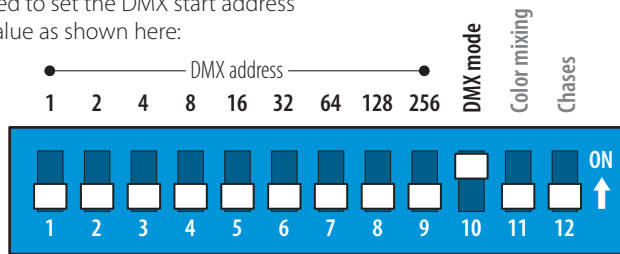
The AL Driver 4 module controls a single circuit of RGB or RGBW LED tape, either under control of an external DMX signal or using standalone color mixes or chase patterns. The AL Driver 4 is a constant voltage device and needs to operate from a 24VDC power supply (4A maximum).



EXTERNAL DIMMING CONTROL

To select external control, ensure that switch 10 is ON. Switches 1 to 9 are then used to set the DMX start address and 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.

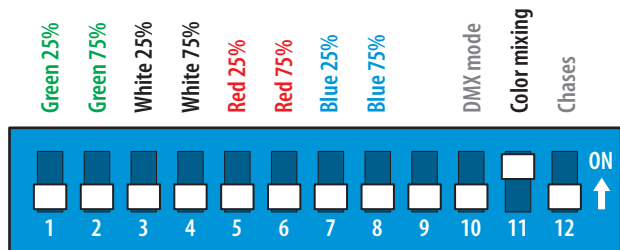


STANDALONE CHASES

To select standalone chases, ensure that switch 12 is ON, while 10 and 11 are OFF. Switches 1 to 3 select the *Fade time* (0 to 100%); switches 4 to 6 adjust the *Speed* (0 to 30s) and 7 to 9 select the *Chase program* (9 chases).

STANDALONE COLOR MIXING

To select standalone color mixing, ensure that switch 11 is ON, while 10 and 12 are OFF. Switches 1 to 8 are then used to set the overall color mix. If both the 25% and 75% switches for any one color are set to ON, that color will be shown at 100%:



FLEX TUBE SC / DW / SPECTRUM

DIMMED (0-10V, DALI OR DMX CONTROL)

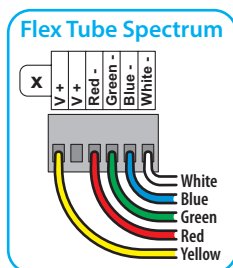
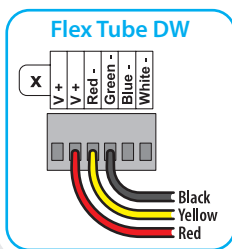
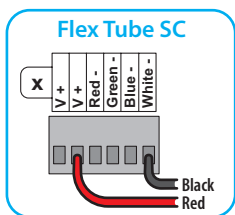
Four ports: [part #: AL Driver 200]

Six ports: [part #: AL Driver 400] or

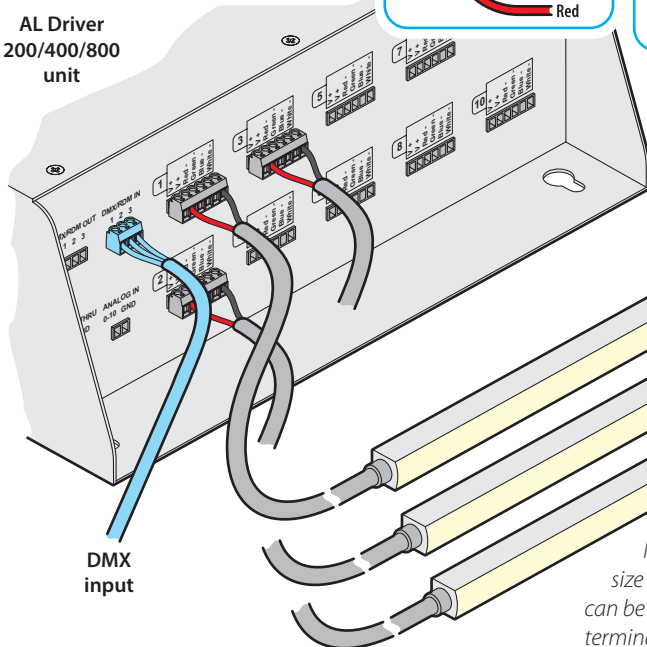
Ten ports: [part #: AL Driver 800].

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

Connections:



AL Driver
200/400/800
unit



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	AL Driver 400	AL Driver 800
Maximum overall current	8A	16.5A	33A
Flex Tube SC (red or amber)	3 spools	6 spools	10 spools
Flex Tube SC (all others)	2 spools	4.5 spools	9 spools
Flex Tube DW	2 spools	4.5 spools	9 spools
Flex Tube Spectrum	2 spools	4 spools	8.5 spools

Note: SC and DW spools are 23 feet (7m) maximum. Spectrum spools are 19.6 feet (6m) maximum

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

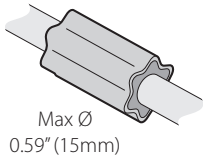
Colors	SC	2200K, 2700K, 3000K, 3500K, 4000K 5700K, Red, Green, Blue or Amber
	DW	Dynamic white: 2200K to 5700K
	Spectrum	QS: RGBW, W=3000K or QW4: RGBW, W=4000K
Beam angle		120°
Photometrics	SC	Up to 140 lumens per foot (white models: 80 CRI, 3 step SDCM)
	DW	146 lumens per foot (estimated)
	Spectrum	95 lumens per foot (estimated)
Length	SC	Built to order lengths from 4.37" (111mm) to 22.96' (7m)
	DW	Built to order lengths from 6.56" (166.6mm) to 22.96' (7m)
	Spectrum	Built to order lengths from 6.56" (166.6mm) to 19.6' (6m)
Voltage		24VDC
Power	SC	3.56W per foot, 12W per meter (except red & amber: 2.43W per foot, 8W per meter)
	DW	3.56W per foot, 12W per meter
	Spectrum	4.57W per foot, 15W per meter
Lumen maintenance (L₇₀)		150,000 hours
Amb. operating temperature		-40°F to 131°F (-40°C to 55°C)
Material		UV resistant silicone
Ingress protection		IP68 wet location, submersible* up to 6.56' (2m)
Impact resistance		IK08 Protected up to a 5 Joule impact
Weight	SC	5.73 lbs (2.59 kg) - 7m spool
	DW	5.73 lbs (2.59 kg) - 7m spool
	Spectrum	4.3 lbs (1.95 kg) - 6m spool

Certifications

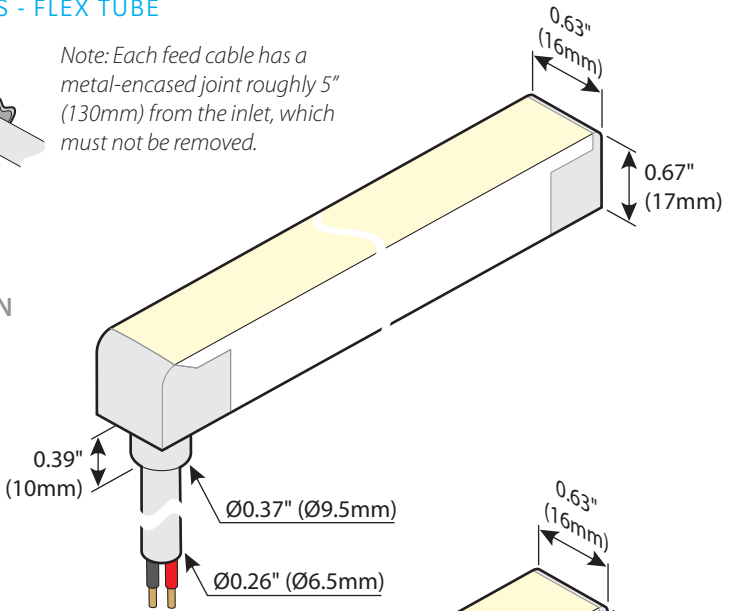


* UL approval limits submersible installation to non-human occupied and freshwater locations only. All cables must be landed in environmentally suitable junction boxes.

DIMENSIONS - FLEX TUBE

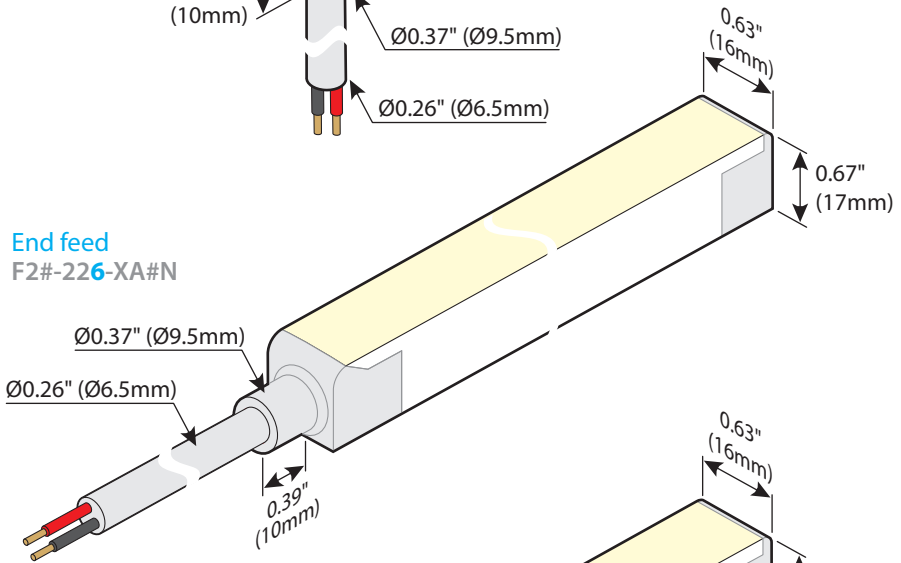


Note: Each feed cable has a metal-encased joint roughly 5" (130mm) from the inlet, which must not be removed.



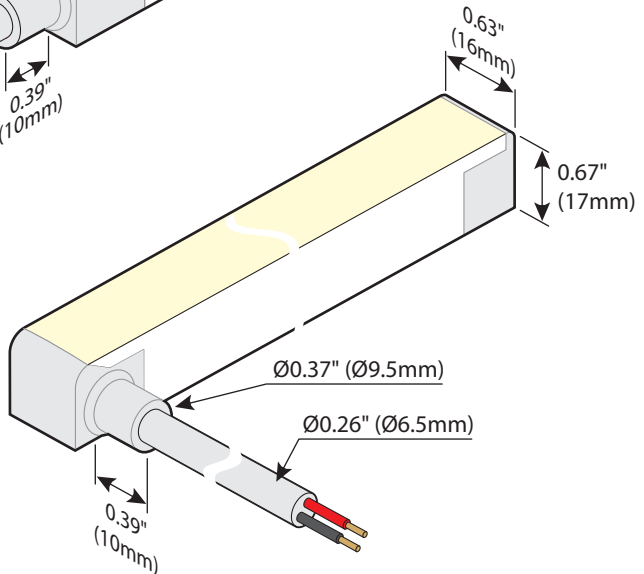
Rear feed
F2#-225-XA#N

End feed
F2#-226-XA#N



Left side feed
F2#-224-XA#N

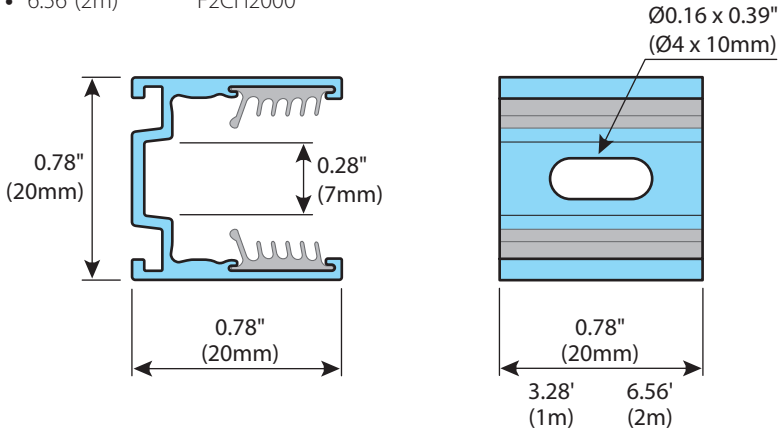
Right side feed
F2#-222-XA#N



DIMENSIONS - SURFACE AND RECESSED MOUNTING CHANNELS

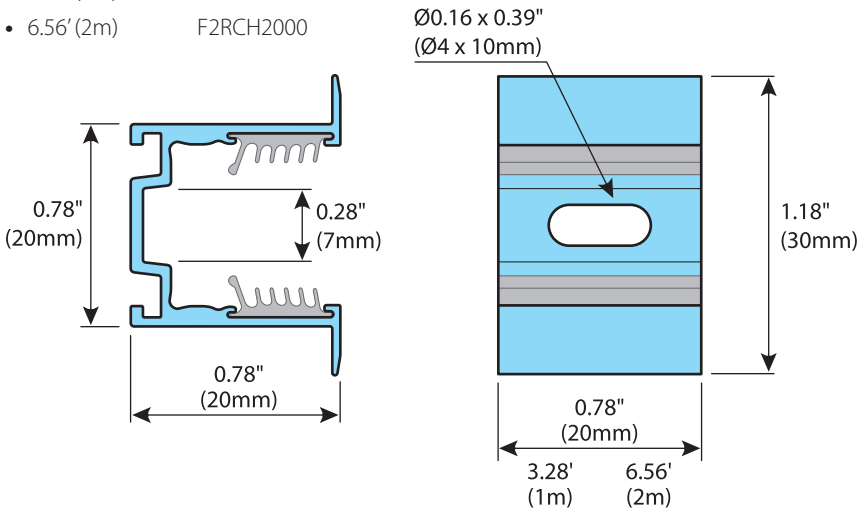
Surface mounting channel

- 0.78" (20mm) F2CH20
- 3.28' (1m) F2CH1000
- 6.56' (2m) F2CH2000



Recessed mounting channel

- 0.78" (20mm) F2RCH20
- 3.28' (1m) F2RCH1000
- 6.56' (2m) F2RCH2000



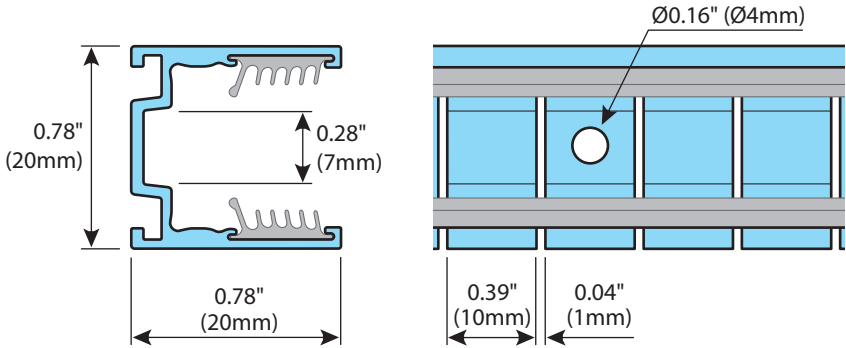
Slot spacing

On 1m and 2m lengths of both channel types, the screw slots are spaced at 200mm (7.87") centers (five slots on 1m lengths and ten slots on 2m lengths).

DIMENSIONS - FLEXIBLE MOUNTING CHANNEL

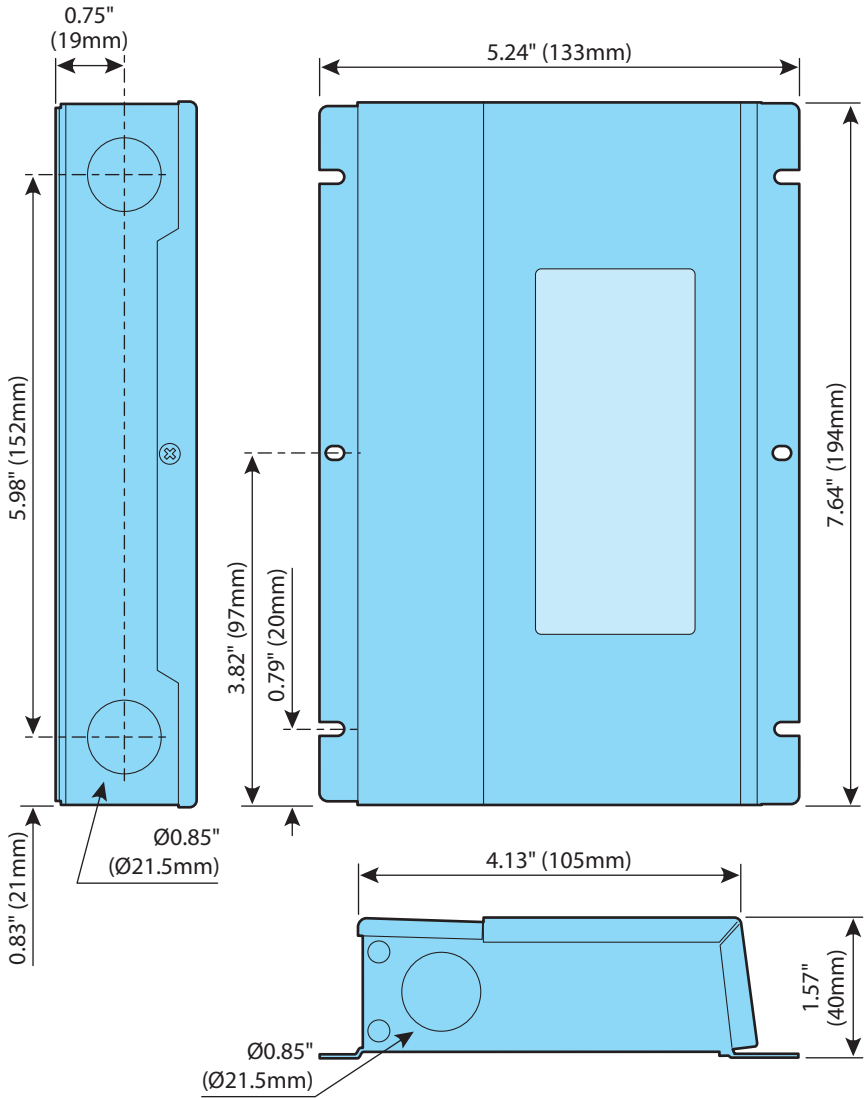
(for use only with horizontal bend models - F2B/F2N/F2H)

- 1.6' (0.5m) F2FCH500
- 3.28' (1m) F2FCH1000



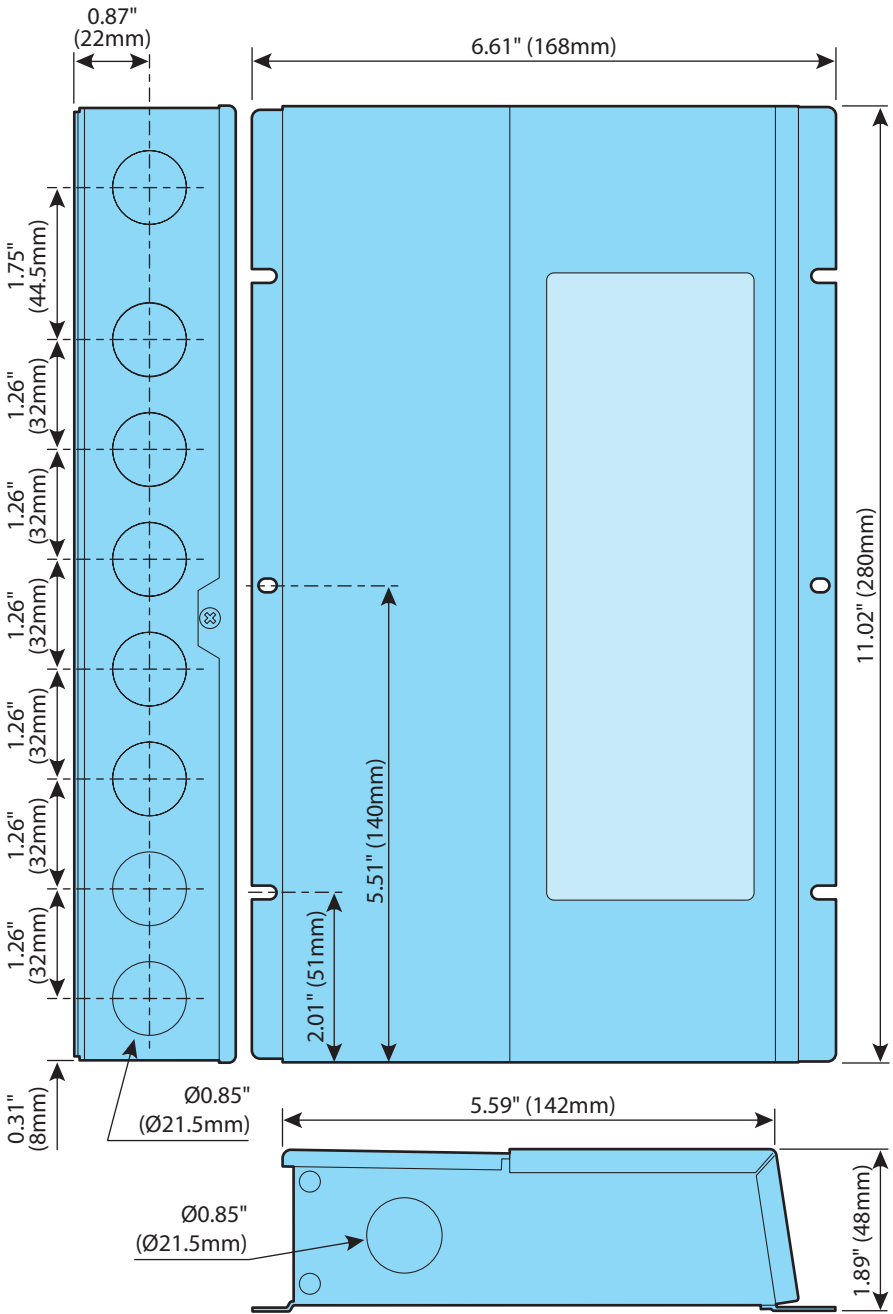
Note: The Ø0.16" (4mm) mounting holes are spaced at 4.57" (116mm) - on every tenth segment.

DIMENSIONS - MLE DRIVER 96



Weight: 3.1 lbs (1.4kg)

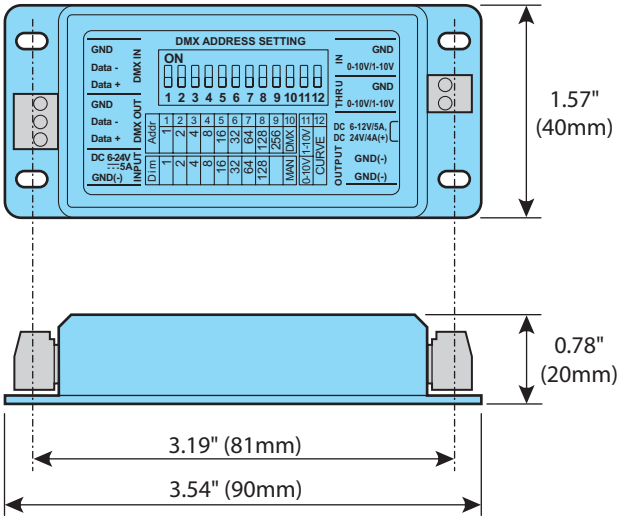
DIMENSIONS - MLE DRIVERS 192 AND 288



Weight (192): 5.5 lbs (2.5kg)

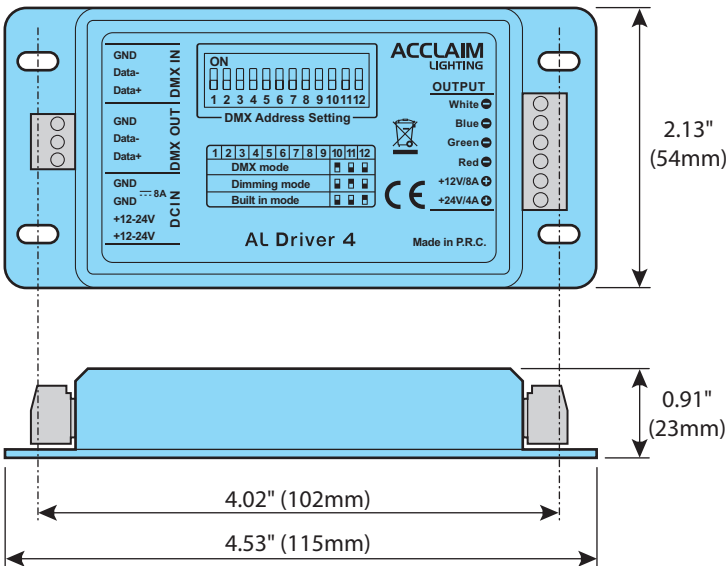
Weight (288): 5.7 lbs (2.6kg)

DIMENSIONS - AL DRIVER 1



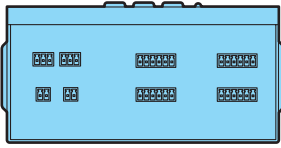
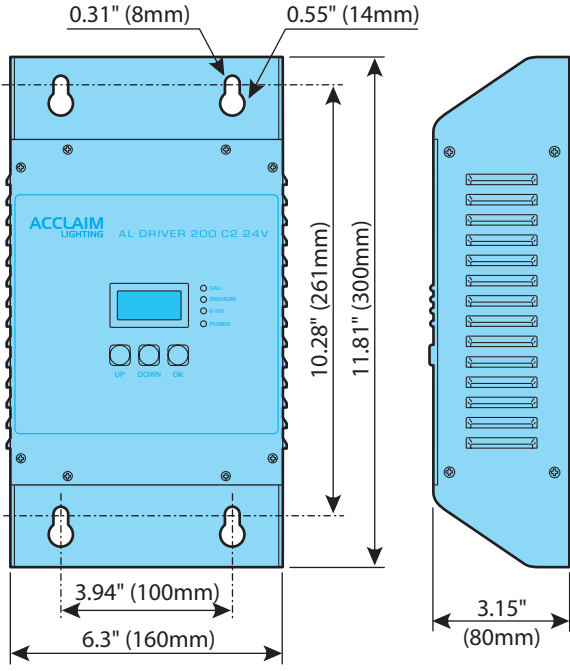
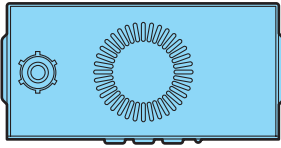
Weight: 0.1 lbs (45g)

DIMENSIONS - AL DRIVER 4



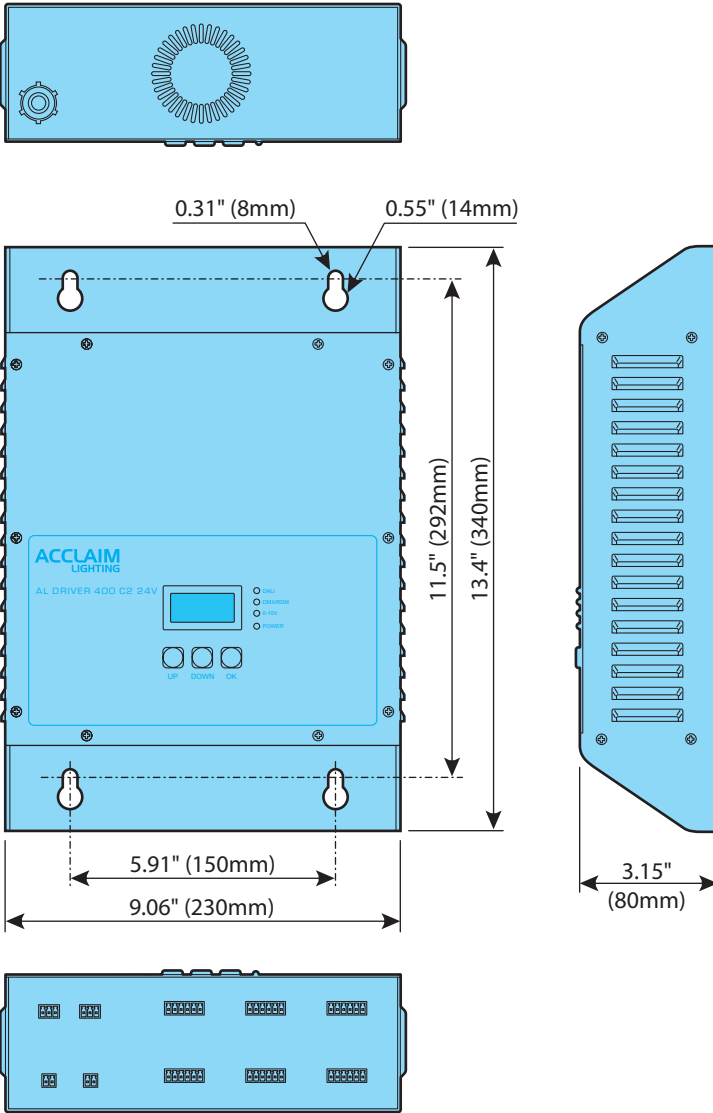
Weight: 0.1 lbs (45g)

DIMENSIONS - AL DRIVER 200



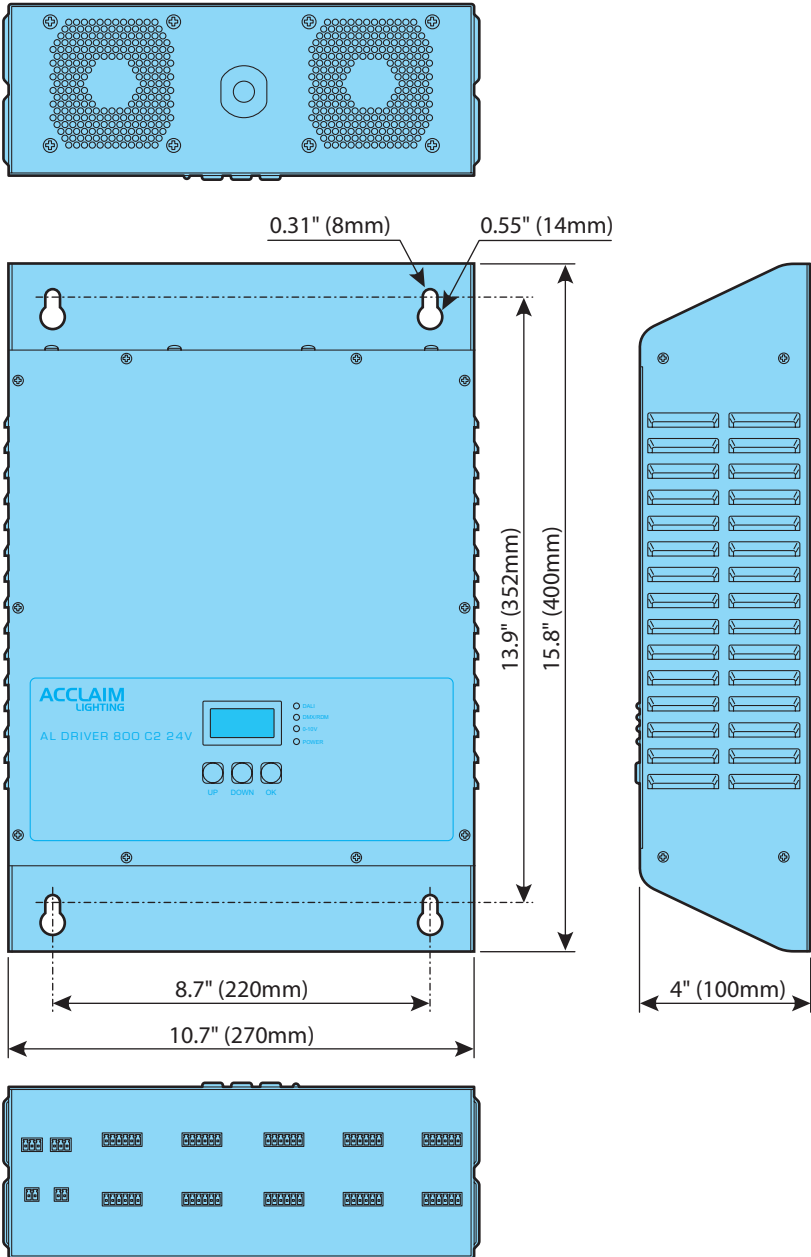
Weight: 5.29 lbs (2.4kg)

DIMENSIONS - AL DRIVER 400



Weight: 8.4 lbs (3.8kg)

DIMENSIONS - AL DRIVER 800



Weight: 14.4 lbs (6.5kg)

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:

- 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.
- Flex Products: 3 Years (1,095 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 thereof. 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