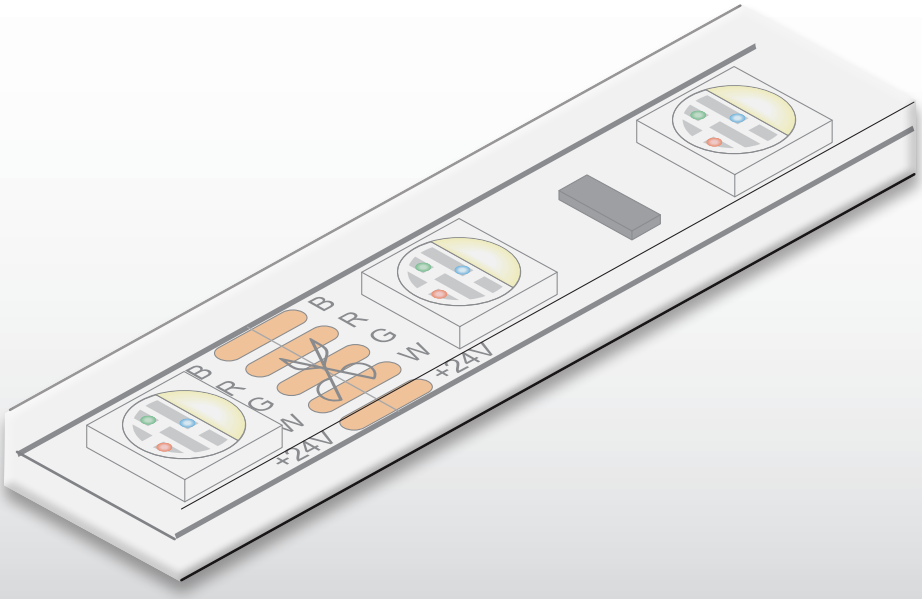
ACCLAIM
LIGHTING



Flex Spectrum Exterior

User guide

Contents

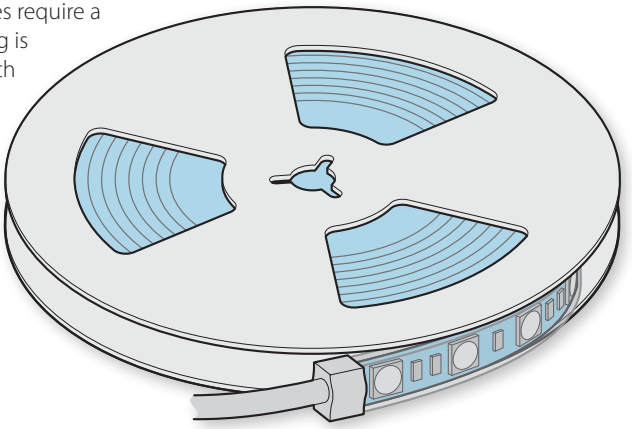
Introduction

Welcome

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

Flex Spectrum Exterior tapes use quad color diodes with warm white, red, green and blue emitters to allow a much wider range of saturated and pastel color mixes. By mixing blue with the warm white it is possible to achieve a full range of whites ranging from 3000K to 7000K while maintaining CRI (Color Rendering Index) values in excess of 80.

Flex Spectrum Exterior tapes require a 24VDC supply and dimming is supported using Pulse Width Modulation (PWM) by various optional driver units - see page 6.



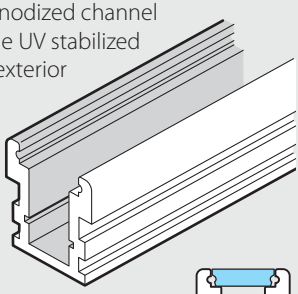
Safety

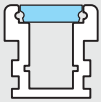
- Ensure the power input is supplied from a correctly fused, earthed and environmentally protected location.

Channel types

Flex exterior line channel [FLX EXL]

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





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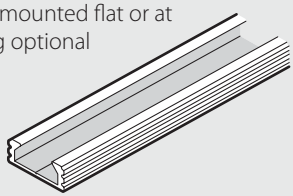
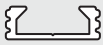
Flex channel low profile [FLX444]

A very low profile channel (without lens) which can be mounted flat or at an angle using optional fixing kits.





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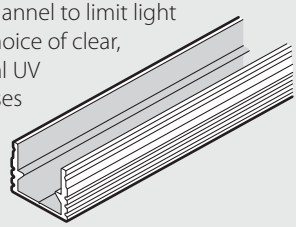
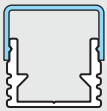
Flex channel tall profile [FLX888]

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





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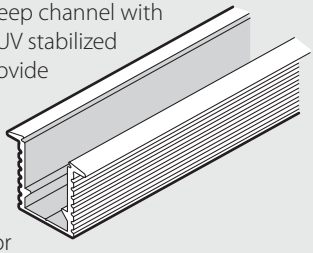
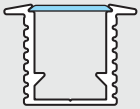
Flex channel recessed [FLX777]

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





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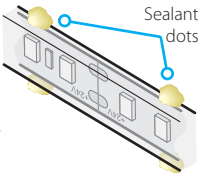
Installation

Flex Spectrum 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 Spectrum 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 Spectrum connections, within the channels, are fully encapsulated.

When mounting on the sides or undersides 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.



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*.

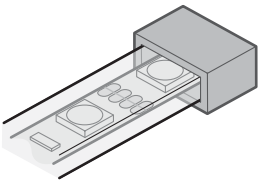
Other contamination or oxidation

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 connecting the tape

Flex Spectrum tapes are supplied with ready made connections at one end. All models are supplied with a 3.28' (1m) encapsulated cable with bare ends.

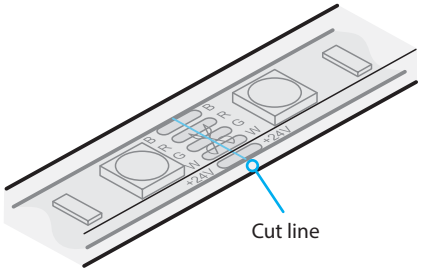


Two silicone end caps are provided with each Flex Spectrum spool to protect cut ends

To cut the tape

Flex Spectrum tapes are marked with a cut line every four inches (100mm) - every six 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 the tape

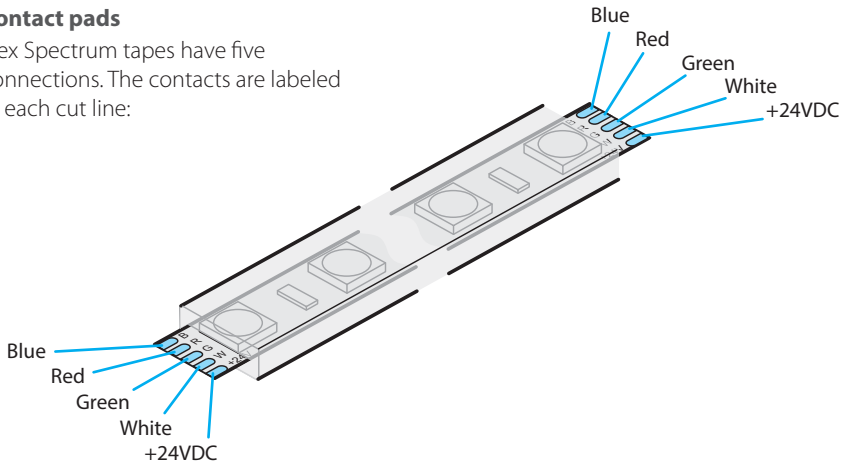
Once cuts are made to a Flex Spectrum tape, connections need to be made to the new sections. Either side of each cut line are bare copper contact pads where you can make connections by soldering feed wires.

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 Spectrum tapes have five connections. The contacts are labeled at each cut line:



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 Spectrum is fixed in place, however, it can also be done prior to installation. Allow the sealant to fully set before disturbing the tape.

Powering and dimming Flex Spectrum tapes

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

	per foot	*per meter*	*per 16.4' (5m) spool*
•	4.5W	15W	75W

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

Connection cables

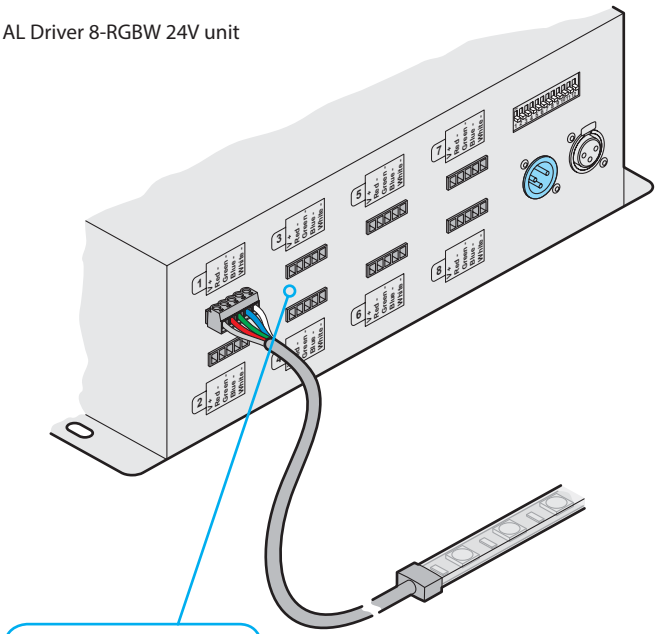
The connection cables (not supplied) used to link Flex Spectrum tapes to the power/driver unit should follow these guidelines (based on a load of 3.13A for 16.4'/5 meters of Flex Spectrum tape):

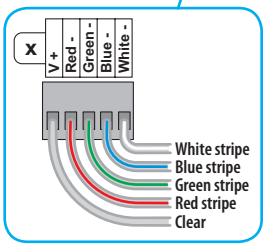
- Up to 40 feet (12m) 18 AWG (0.823mm^2)
- Up to 100 feet (30m) 14 AWG (2.081mm^2)
- Up to 180 feet (54m) 12 AWG (3.309mm^2)

In all cases, ensure the voltage drop at the fixture end of the link cable is no greater than 9% (2.16V) of the original 24VDC supply.

Flex Spectrum power supplies and dimmers

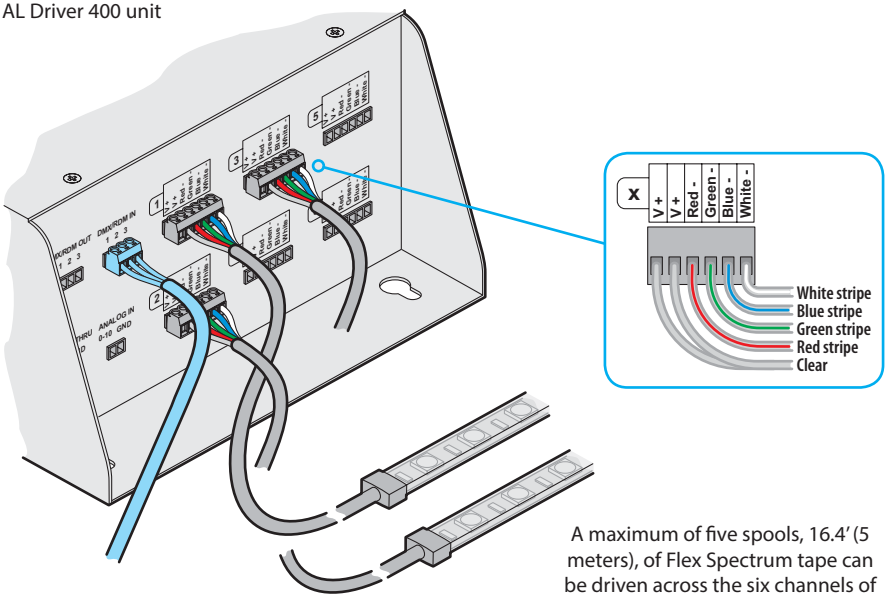
AL Driver 8-RGBW 24V unit





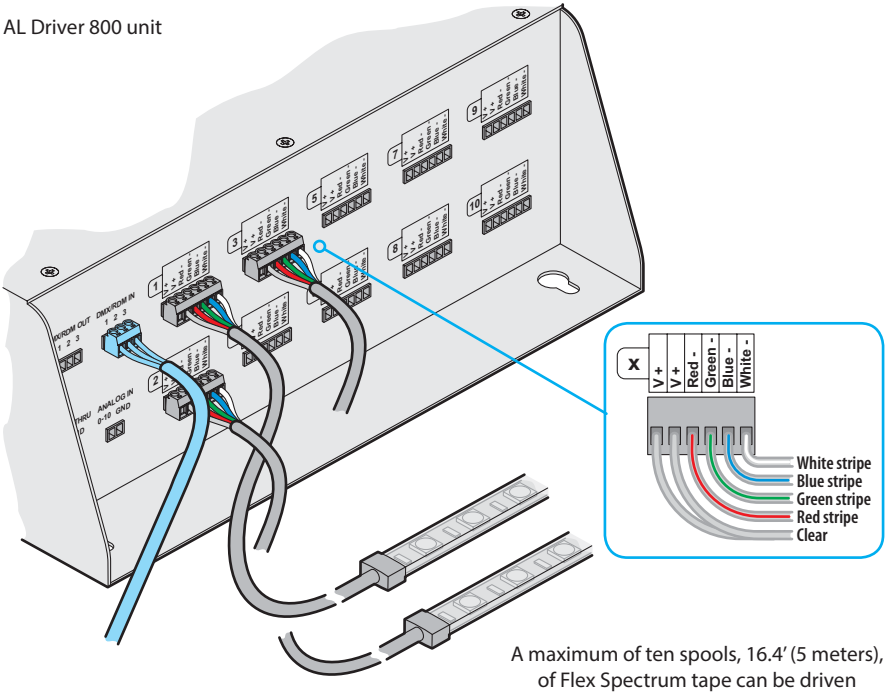
A maximum of one spool, 16.4' (5 meters), of Flex Spectrum tape can be driven across the eight channels of the unit.

AL Driver 400 unit



A maximum of five spools, 16.4' (5 meters), of Flex Spectrum tape can be driven across the six channels of the unit; maximum of one spool per channel.

AL Driver 800 unit



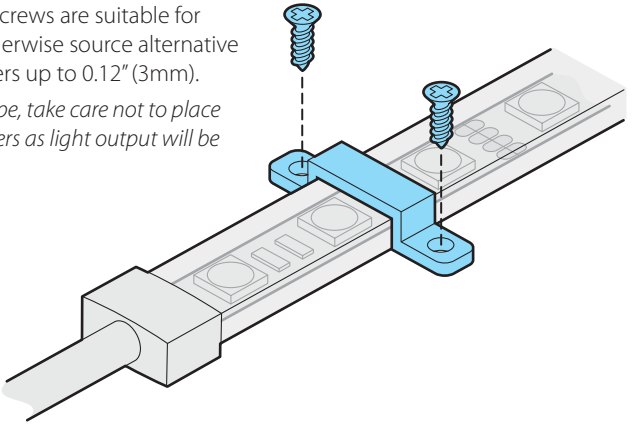
A maximum of ten spools, 16.4' (5 meters), of Flex Spectrum tape can be driven across the ten channels of the unit; maximum of one spool per channel.

Clip mounting

Each Flex Spectrum 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.

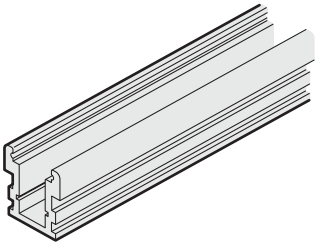
Ensure that the supplied screws are suitable for the mounting surface, otherwise source alternative screws/bolts with diameters up to 0.12" (3mm).

Tip: When mounting the tape, take care not to place the clips over the LED emitters as light output will be affected.

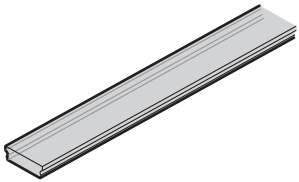


Flex exterior line channel (FLK EXL)

This sturdy anodized aluminum channel allows the Flex Spectrum tape to be recessed into exterior surfaces and is rated for walk-over installations. Thanks to the increased thickness of its profile, the channel can withstand pressures of up to 2.9psi (20kN/m^2). To achieve effective IP67 water ingress protection it is necessary to use Dow Corning® 799, 1199 or equivalent silicone sealant to form complete seals between the channel and its UV coated lens - plus any cable access holes. For channel dimensions, see page 14.



Flex exterior line channel
(3.28' / 1m)
[FLK EXL]



Exterior line opal lens
(3.28' / 1m)
[FLK EXL OL]

End cap
[FLK EXL EC]

End cap with hole
[FLK EXL ECH]

Options

To fit the Flex Spectrum tape

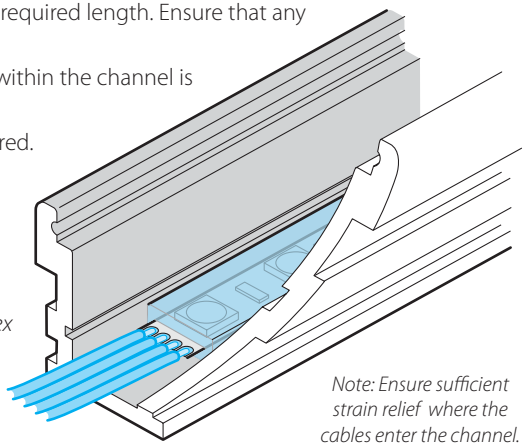
Note: The molded Flex Spectrum connector fitted on each spool is too large to fit within the channel. In order to achieve a fully sealed installation, it will be necessary to remove the molded connection and solder new feed wires directly to the nearest cut line. See page 5.

1 If necessary, cut the channel to the required length. Ensure that any resulting burrs are removed.

2 Ensure the tape mounting surface within the channel is completely dry and clean.

3 Determine the length of tape required. Mark the positions at each end of the channel where the tape will be placed.

Note: Flex Spectrum tape can only be cut every 4" (100mm) and this may mean that a precise length of Flex Spectrum tape cannot be achieved. Therefore it may be beneficial to center the tape within the channel to achieve an even distribution.



Note: Ensure sufficient strain relief where the cables enter the channel.

4 Cut the tape to the nearest marked cutpoint.

5 Carefully push the tape into the channel, starting at the marked position. The tape's size will cause an interference fit within the channel, keeping it in place without adhesive.

IMPORTANT: While pressing the Flex Spectrum tape into position, take care not to put excessive pressure on the components or connections.

6 Use Dow Corning® 799, 1199 (or equivalent) silicone sealant to fully encapsulate the power connections to protect against any moisture ingress.

To recess in ground

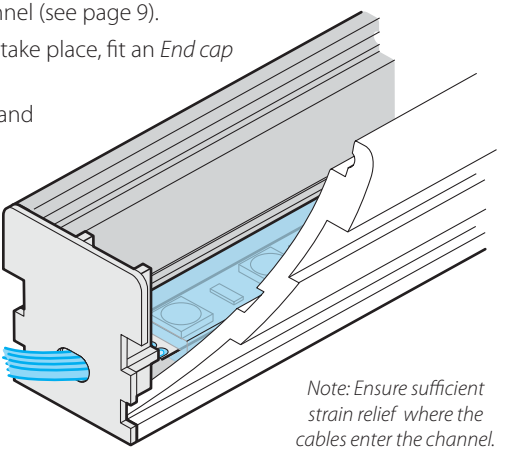
1 Fit the Flex Spectrum tape to the channel (see page 9).

2 At the end where the connection will take place, fit an *End cap with hole*.

3 Feed the cables through the end cap and carefully solder to the contact pads, if necessary (see page 5).

4 At the other end of the channel, fit a standard *End cap*.

5 To ensure long term protection against water ingress, coat all internal end cap seams with a bead of sealant (Dow Corning® 799, 1199 or equivalent). Pay particular attention to the cable entry point. Ensure appropriate strain relief for the cable.



Note: Ensure sufficient strain relief where the cables enter the channel.

6 Fit and seal the required lens (see below).

7 Place the sealed tape/channel assembly into the prepared ground recess.

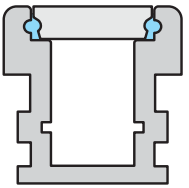
To fit the lens

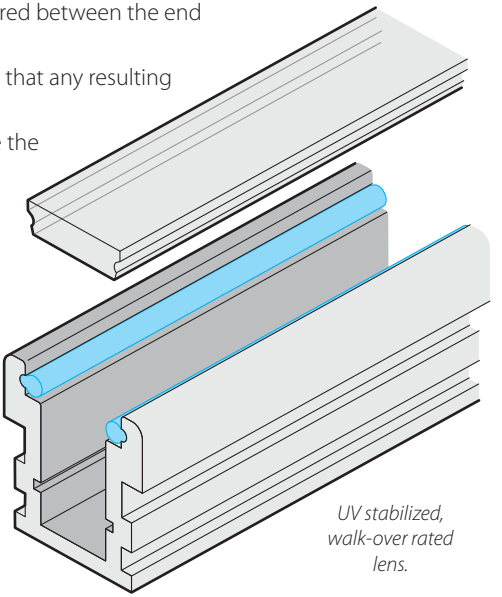
1 Measure the exact length of lens required between the end caps at each end of the channel.

2 Carefully cut the lens to length. Ensure that any resulting burrs are removed.

3 Along each side of the channel (where the lens will sit) carefully run a thin bead of sealant (Dow Corning® 799, 1199 or equivalent). The bead should be large enough in diameter to ensure a good seal between the channel and the lens, but not so much that excess sealant runs into the channel and contaminates the lens inner face.

4 Determine the correct orientation of the lens - it has a wider outer face and a slightly narrower inner face.





UV stabilized, walk-over rated lens.

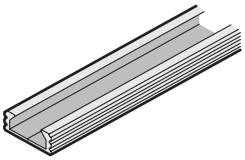
5 Carefully lower the lens onto the beads of sealant and ensure that it fully seats in place. Wipe away any excess sealant.

6 Apply further sealant between the lens and the end caps.

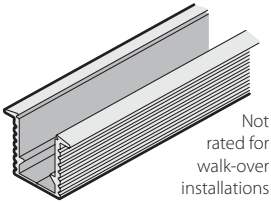
Flex channel - low profile/recessed/tall (FLX444/777/888)

There are three options within the Flex channel range to suit varying installation requirements: A low profile option with no lens; a recessed channel for concealment within surfaces and a tall profile channel that reduces light spill. The latter two channels have a choice of clear, frosted or opal lenses. For channel dimensions, see page 14.

Options

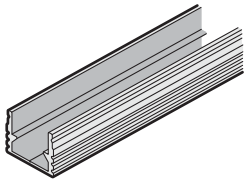


Flex channel low profile
(4' / 1.21m)
[FLX444]

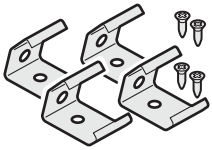


Not rated for walk-over installations

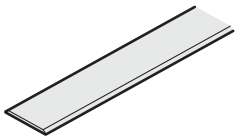
Flex channel recessed
(4' / 1.21m)
[FLX777]



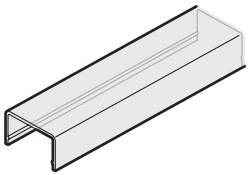
Flex channel tall profile
(4' / 1.21m)
[FLX888]



Angled brackets plus 2.5 x 10mm wood screws
[FLX113]

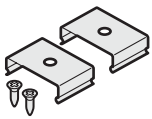


Recessed lenses (4' / 1.21m)
[Clear: FLX727]
[Frosted: FLX715]
[Opal: FLX702]



Tall profile lenses (4' / 1.21m)
[Clear: FLX825]
[Frosted: FLX813]
[Opal: FLX801]

Flat brackets/ joiners plus 2.5 x 10mm wood screws
[FLX111]



To fit the Flex Spectrum tape

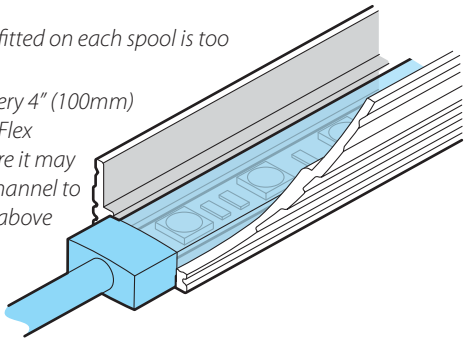
1 If necessary, cut the channel to the required length. Remove any resulting burrs.

2 Ensure the tape mounting surface within the channel is completely dry and clean.

3 Determine the length of tape required. Mark the positions at each end of the channel where the tape will be placed.

Note: The molded Flex Spectrum connector fitted on each spool is too large to fit within the channel.

Note: Flex Spectrum tape can only be cut every 4" (100mm) and this may mean that a precise length of Flex Spectrum tape cannot be achieved. Therefore it may be beneficial to center the tape within the channel to achieve an even distribution (subject to the above note).



4 Cut the tape to the nearest marked cutpoint.

5 *Note: If you are attaching the channel directly to a surface, see 'To surface mount directly' on page 12* ***before*** *inserting the tape.*

Carefully push the tape into the channel, starting at the marked position. The tape's size will cause an interference fit within the channel, keeping it in place without adhesive.

IMPORTANT: While pressing the Flex Spectrum tape into position, take care not to put excessive pressure on the components or connections.

6 If necessary, use Dow Corning® 799, 1199 or equivalent silicone sealant to fully encapsulate the power connections to protect against any moisture ingress.

To surface mount directly

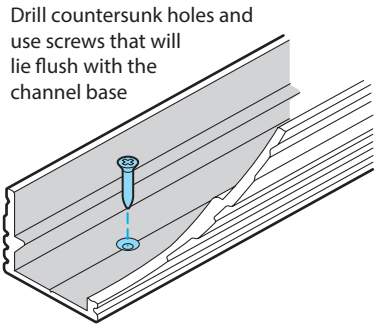
1 Before fitting the Flex Spectrum tape, determine where the channel is to be mounted.

2 Drill the required number of holes in the base of the channel and countersink them. *Note: A small groove runs down the center of each channel base to provide a guide for your drill.*

3 Mount the channel and use countersunk screws to secure it. **IMPORTANT: The screw heads must lie flush with the channel base.**

4 Fit the Flex Spectrum tape to the channel (see page 11).

5 Carefully solder to the contact pads, if necessary (see page 5).



To surface mount using brackets

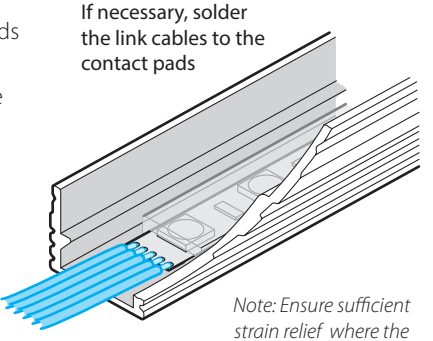
1 If necessary, carefully solder to the contact pads (see page 5).

2 Fit the Flex Spectrum tape to the channel (see page 11).

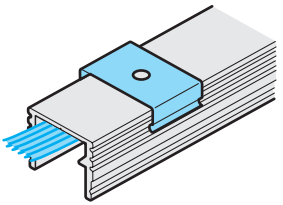
3 Attach two or more brackets (of the required type: *Flat brackets* or *Angled brackets*) to the mounting surface using either the supplied screws or others that are more appropriate to the surface type.

The angled bracket can be used in either of two orientations to provide an angle of either 30 or 45 degrees to the mounting surface (as shown below).

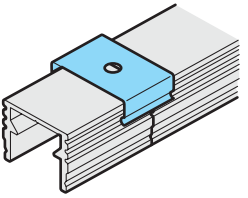
4 Clip the channel into the mounting brackets:



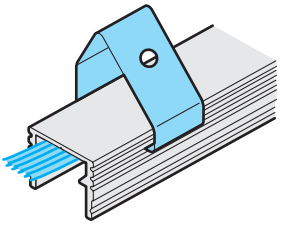
Note: Ensure sufficient strain relief where the cables enter the channel.



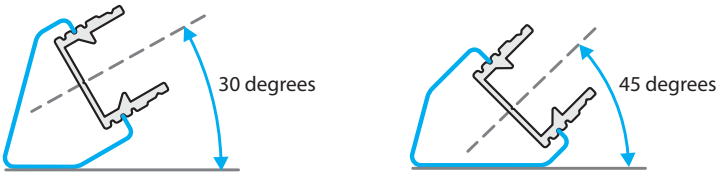
Attaching a flat bracket



Using a flat bracket to join two channels



Attaching an angled bracket



The angled bracket can be used in either of two orientations to provide angles of either 30 or 45 degrees to the mounting surface

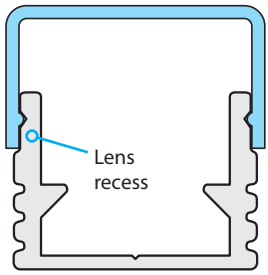
To fit a lens

1 Measure the exact length of lens required between each end of the channel.

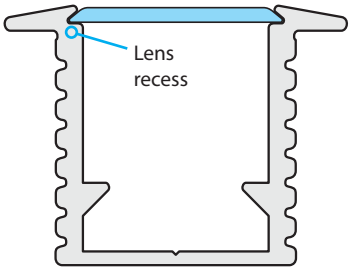
2 Carefully cut the lens to length. Ensure that any resulting burrs are removed.

3 Depending on the channel type:

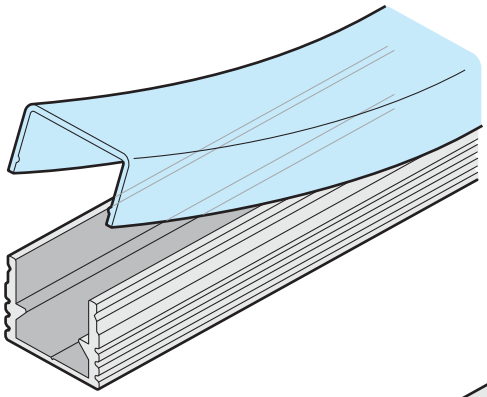
- **Tall profile**: Place one end of the UV stabilized lens over the channel so that it slots into the 'Lens recess' (see right). Then run your hand along the length of the lens to gently push the remainder into place.
- **Recessed**: Insert one end of the UV stabilized lens into the 'Lens recess' within the channel (see right). Then slide the remaining lens into the recess.
  Note: This channel type is not rated for walk-over installations.



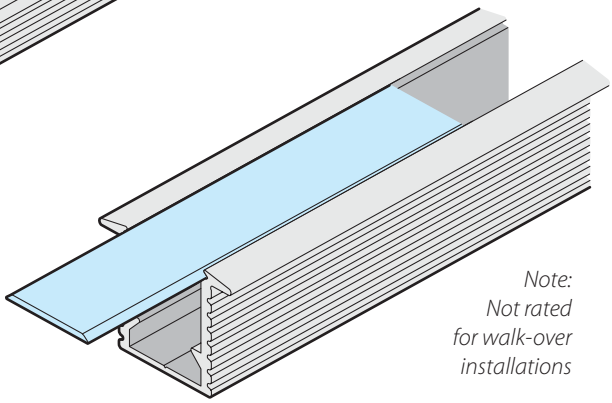
Tall profile
[FLX888]



Recessed
[FLX777]



Tall profile
[FLX888]



Note:
Not rated
for walk-over
installations

Recessed
[FLX777]

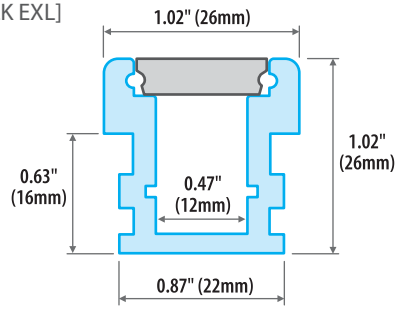
Further information

Channel dimensions

The Flex external line channels and lenses are supplied in lengths of 3.28' (1m) whereas the FLX444, FLX777 and FLX888 (and their respective lenses) are all supplied in lengths of 4' (1.21mm).

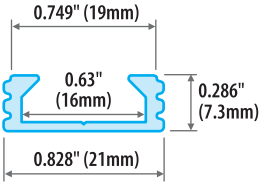
Flex external line channel

[FLK EXL]



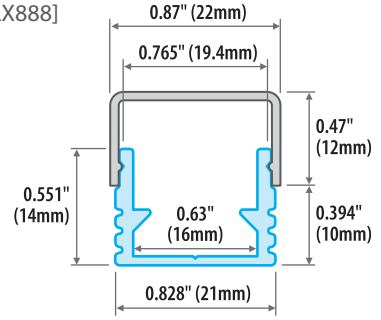
Flex channel low profile

[FLX444]



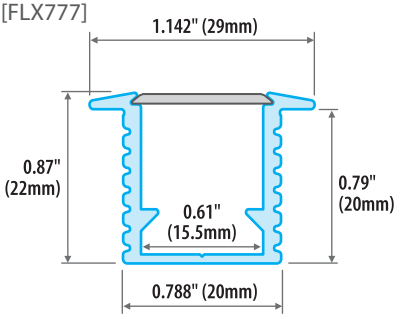
Flex channel tall profile

[FLX888]



Flex channel recessed

[FLX777]



Flex Spectrum Exterior specifications

Beam angle	120°
Color temperature (CCT)	RGB plus 3000K white emitters
Lumen maintenance (L_{70})	50,000 hours (25°C max)
Operating voltage	24VDC
Power consumption	4.5W per foot 15W per meter 75W per 16.4′ (5m) spool
Dimming control	Pulse width modulation
Maximum overall length	16.4′ (5m)
Ingress protection	IP68
Dimensions (W x H x L)	0.59″ x 0.16″ x 16.4′ 15 x 4 x 5000mm
Operating temperature	-40°F to 122°F -40°C to 50°C
Housing	UV coated, flexible silicone jacket
Certifications	

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.
- 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 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