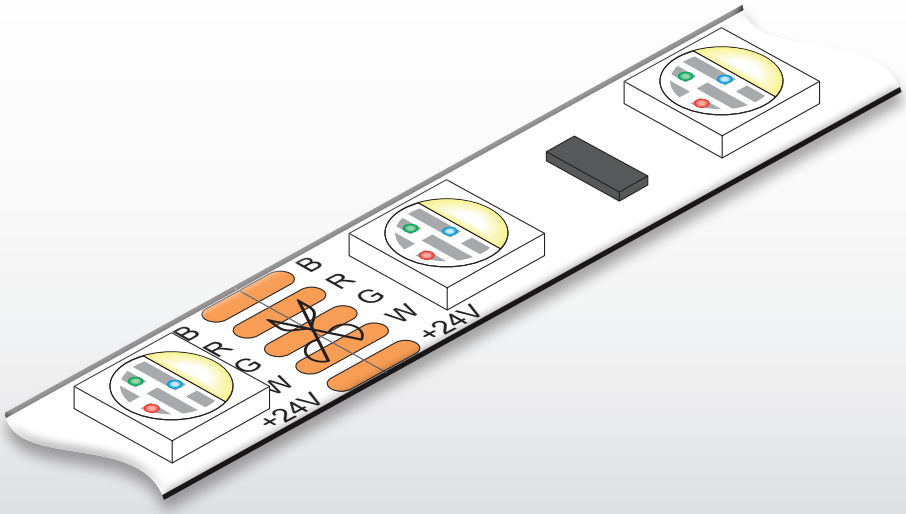
ACCLAIM
LIGHTING



Flex Spectrum Interior

User guide

CONTENTS

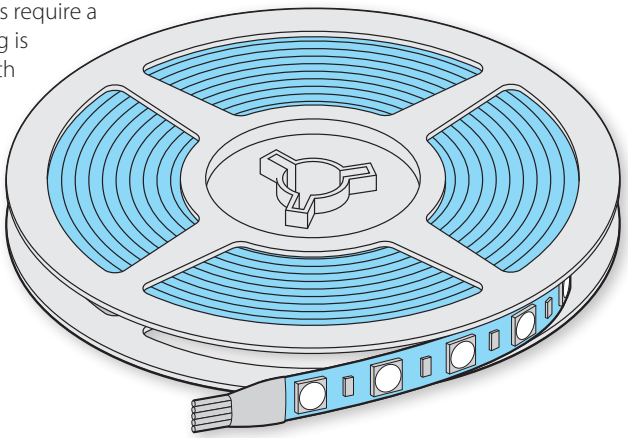
INTRODUCTION

WELCOME

Welcome to the Flex Spectrum Interior range from Acclaim Lighting. These high output LED tapes, together with a range of mounting channels (see opposite page), suit many installation situations.

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



SAFETY

- 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.

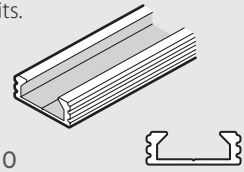
CLEANING

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

CHANNEL TYPES

FLEX CHANNEL LOW PROFILE [FLX444]

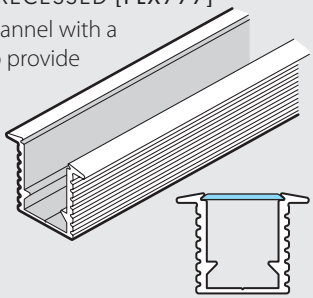
A low profile channel which can be mounted flat or at an angle using optional fixing kits.



Page 10

FLEX CHANNEL RECESSED [FLX777]

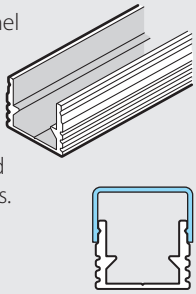
A flanged deep channel with a choice of lenses to provide a neat finish when recessed within a surface.



Page 10

FLEX CHANNEL TALL PROFILE [FLX888]

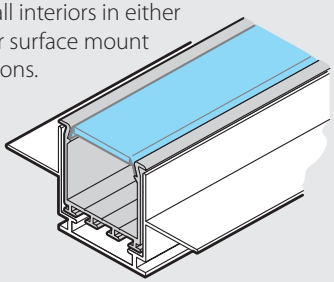
A tall sided channel to limit light spill, with a choice of clear, frosted or opal lenses plus flat or angled mounting options.



Page 10

FLEX DRY WALL CHANNEL [FLK DWM]

An adaptable system of channels for use with drywall interiors in either recessed or surface mount configurations.

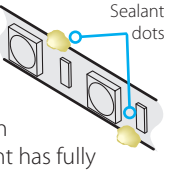


Page 13

INSTALLATION

Flex Spectrum Interior tapes are supplied with 3M™ VHB acrylic adhesive backing, protected by a peel-off paper liner. To ensure that good adhesion is achieved, ensure the mounting surface is free of grease, moisture and any contaminates.

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.

- For further details about specific mounting surfaces, see page 20.

CLEANING AND PREPARING THE MOUNTING SURFACE

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.*

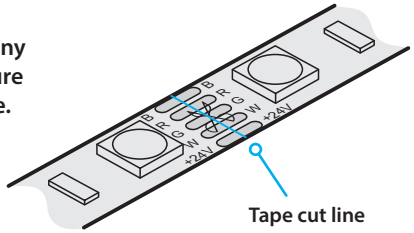
CUTTING AND CONNECTING THE TAPE

Flex Spectrum tapes are supplied with a fixed 3.28' (1m) feed cable (with bare tails).

TO CUT THE TAPE

Flex Spectrum tapes are marked with a cut line every four inches (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 along the line.



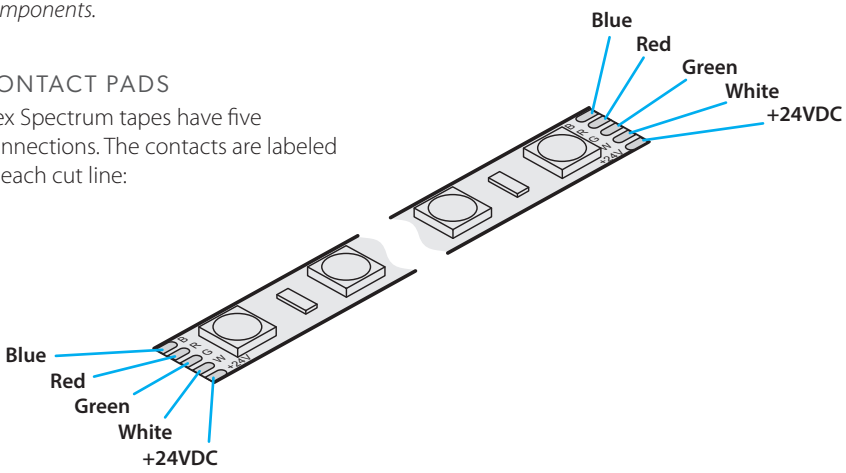
TO CONNECT THE TAPE

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.

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:



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*
•	5.4W	18W	90W

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

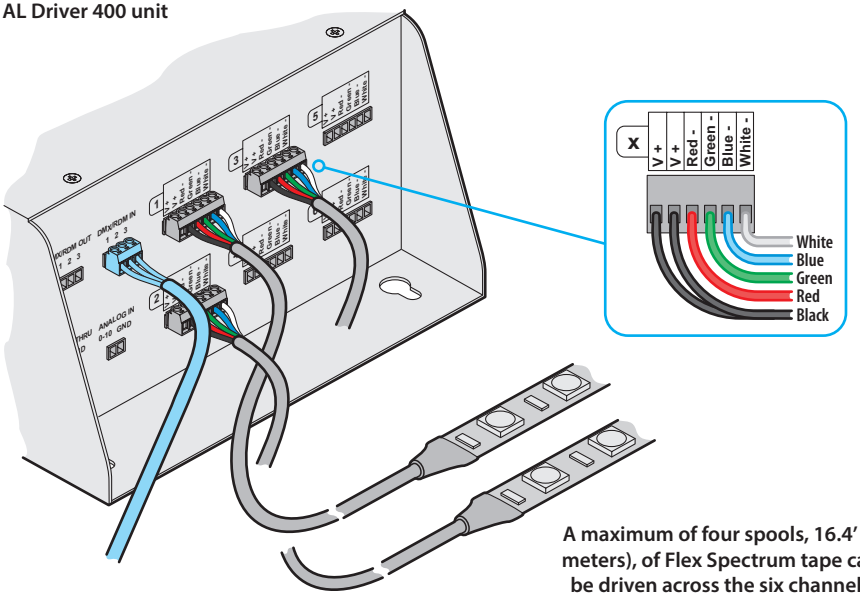
The connection cables (not supplied) used to link Flex Spectrum tapes to the power/driver unit should follow these guidelines (based on a load of 3.13A for 16.4'/5 meters of Flex Spectrum tape):

- 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.

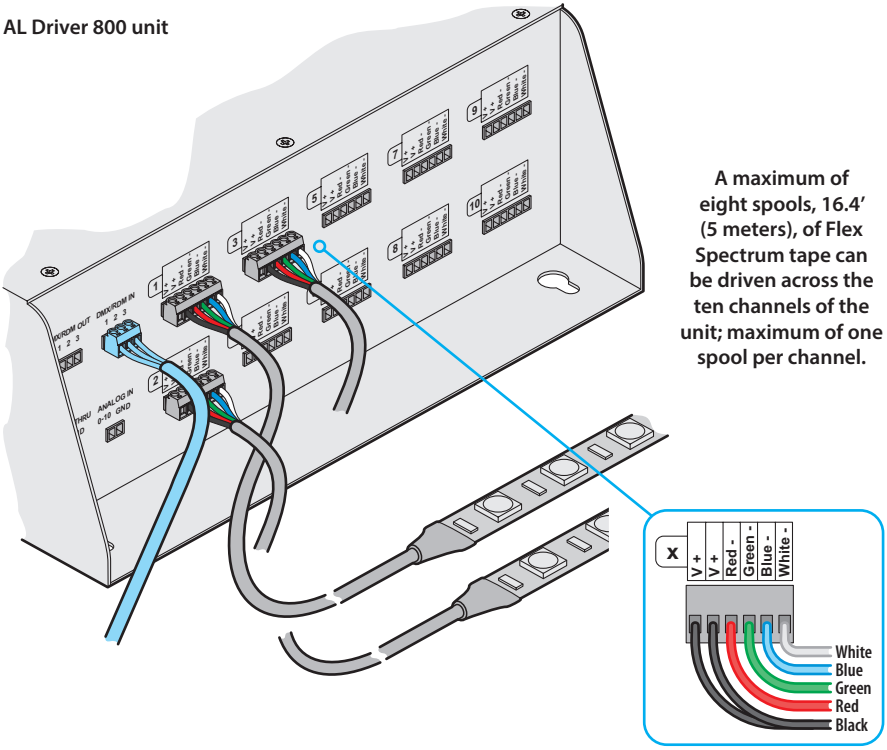
FLEX SPECTRUM DIMMERS

AL Driver 400 unit



A maximum of four 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

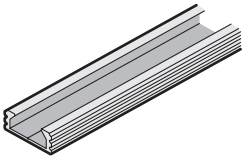


A maximum of eight spools, 16.4' (5 meters), of Flex Spectrum tape can be driven across the ten channels of the unit; maximum of one spool per channel.

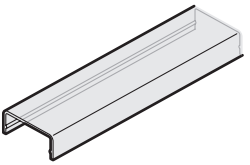
FLEX CHANNEL - LOW PROFILE (FLX444)

This low profile option is ideal for mounting within tight spaces. There is a choice of clear, frosted or opal lenses. For channel dimensions, see page 42.

Options

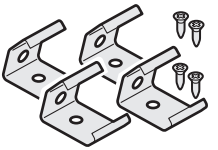


Flex channel low profile
(4' / 1.21m)
[FLX444]

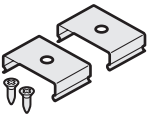


Low profile lenses (4' / 1.21m)
[Clear: FLX LP CL4]
[Frosted: FLX LP FL4]
[Opal: FLX OL4]

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



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



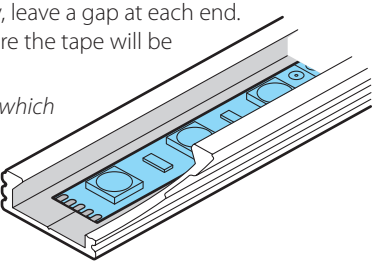
TO FIT THE FLEX SPECTRUM TAPE

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

2 Ensure the tape mounting surface within the channel is completely dry, clean and free of grease. If cleaning is required, please see page 4 for details.

3 Determine the length of tape required. If necessary, leave a gap at each end. Mark the positions at each end of the channel where the tape will be placed.

Note: Flex Spectrum tape can be cut every 1" (25mm), which may slightly constrain the precise lengths of tape that can be achieved. Therefore it may be beneficial to center the tape within the channel to achieve an even distribution.



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 32* ***before*** *sticking the tape in place.*

Begin peeling the backing from the Flex Spectrum tape and carefully stick the Flex Spectrum tape into the channel, starting at the marked position.

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

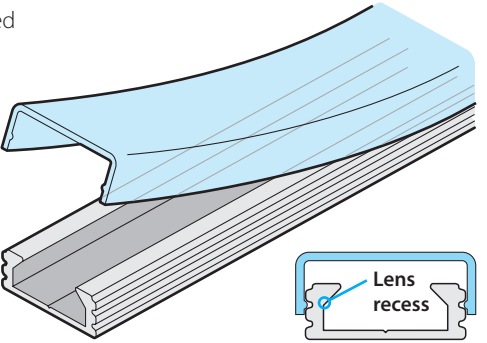
TO FIT A LENS

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 Place one end of the 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.

Note: Lenses are UV stabilized.



TO SURFACE MOUNT DIRECTLY

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

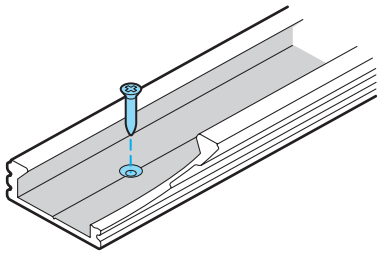
2 Drill the required number of holes in the base of the channel and countersink them. *Note: A small groove runs down the center of each channel base to provide a guide for your drill.*

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 tape to the channel (see Page 31).

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

Drill countersunk holes and use screws that will lie flush with the channel base



TO SURFACE MOUNT USING BRACKETS

1 If necessary, carefully solder to the contact pads or use a feed/link cable (see page 5).

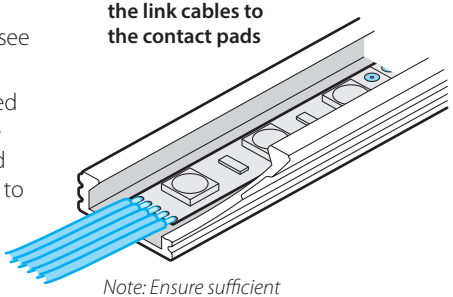
2 Fit the Flex Spectrum tape to the channel (see Page 31).

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.

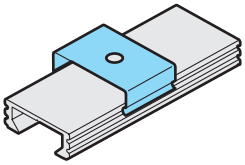
The angled bracket can be used in either of two orientations to provide an angle of either 30 or 45 degrees to the mounting surface (as shown below).

4 Clip the channel into the mounting brackets:

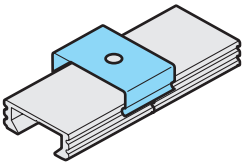
If necessary, solder the link cables to the contact pads



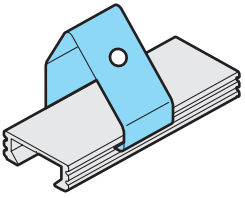
Note: Ensure sufficient strain relief where the cables enter the channel.



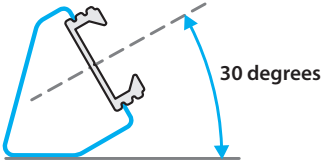
Attaching a flat bracket



Using a flat bracket to join two channels



Attaching an angled bracket

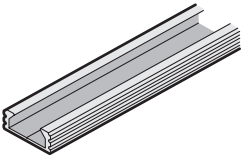


The angled bracket can be used in either of two orientations to provide angles of either 30 or 45 degrees to the mounting surface

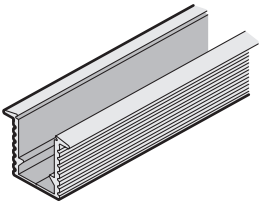
FLEX CHANNEL - RECESSED/TALL (FLX777/888)

These two options suit varying installation requirements: A recessed channel for concealment within surfaces and a tall profile channel that reduces light spill. These two channels have a choice of clear, frosted or opal lenses. For channel dimensions, see page 18.

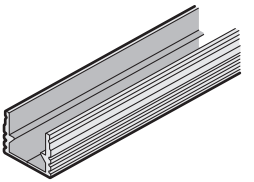
Options



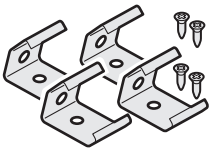
Flex channel low profile
(4' / 1.21m)
[FLX444]



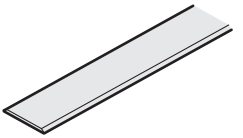
Flex channel recessed
(4' / 1.21m)
[FLX777]



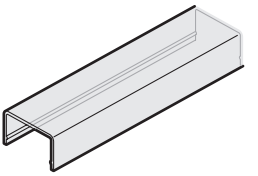
Flex channel tall profile
(4' / 1.21m)
[FLX888]



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

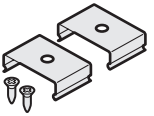


Recessed lenses (4' / 1.21m)
[Clear: FLX727]
[Frosted: FLX715]
[Opal: FLX702]



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

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



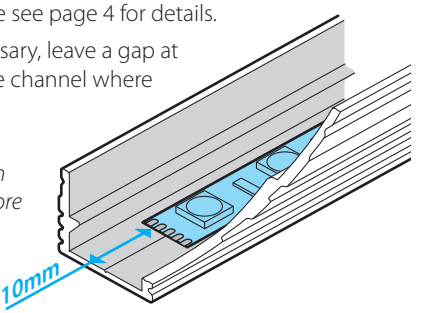
TO FIT THE FLEX SPECTRUM TAPE

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

2 Ensure the tape mounting surface within the channel is completely dry, clean and free of grease. If cleaning is required, please see page 4 for details.

3 Determine the length of tape required. If necessary, leave a gap at each end. 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.



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 11* ***before*** *sticking the tape in place.*

Note: Feed and link cable connectors are too large to fit within the channel.

Begin peeling the backing from the Flex Spectrum tape and carefully stick the Flex Spectrum tape into the channel, starting at the marked position.

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

TO SURFACE MOUNT DIRECTLY

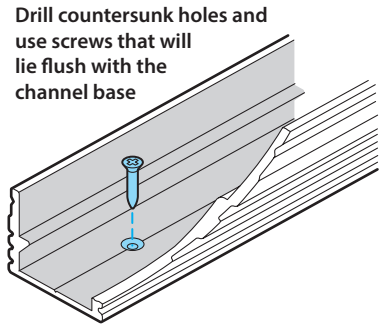
1 Before fitting the Flex Spectrum tape, determine where the channel is to be mounted.

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 10).

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



TO SURFACE MOUNT USING BRACKETS

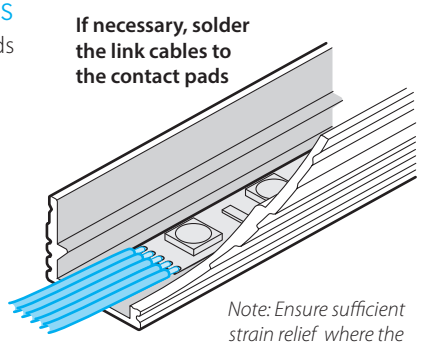
1 If necessary, carefully solder to the contact pads or use a feed/link cable (see page 5).

2 Fit the Flex Spectrum tape to the channel (see Page 10).

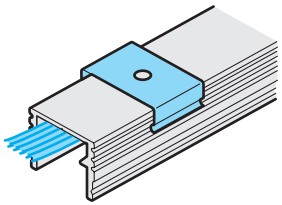
3 Attach two or more brackets (of the required type: *Flat brackets* or *Angled brackets*) to the mounting surface using either the supplied screws or others that are more appropriate to the surface type.

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).

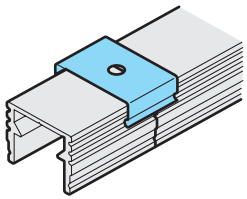
4 Clip the channel into the mounting brackets:



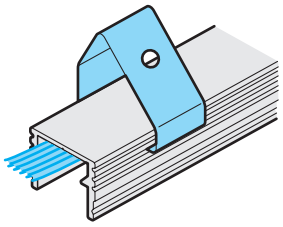
Note: Ensure sufficient strain relief where the cables enter the channel.



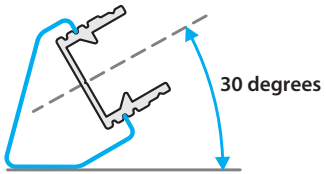
Attaching a flat bracket



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

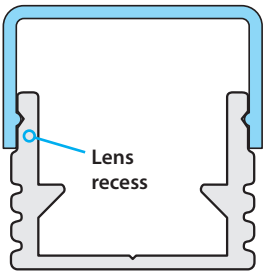
1 Measure the exact length of UV stabilized lens required between each end of the channel.

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

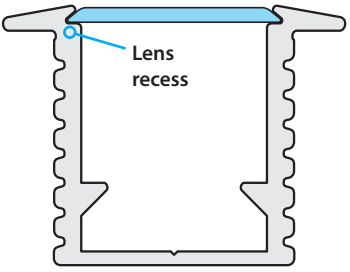
3 Depending on the channel type:

- **Tall profile**: Place one end of the 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 lens into the 'Lens recess' within the channel (see right). Then slide the remaining lens into the recess.

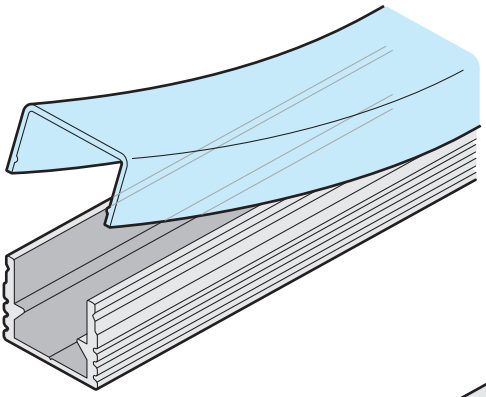
Note: FLX777 and FLX888 channel lenses are UV stabilized.



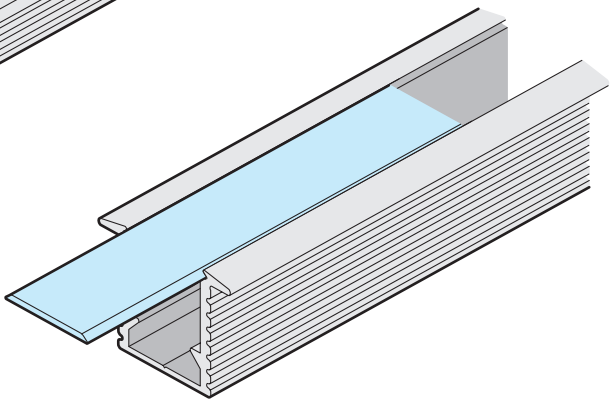
Tall profile
[FLX888]



Recessed
[FLX777]



Tall profile
[FLX888]

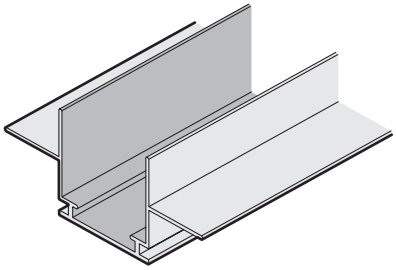


Recessed
[FLX777]

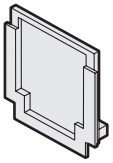
FLEX DRYWALL CHANNEL (FLK DWM/DWC/DWF)

An adaptable system of channels for use with drywall installations. The main FLK DWM mount can be pre-installed during first fix while a choice of two inner channels (containing the Flex Spectrum tape plus connections) can be added later. Alternatively, a channel can be used alone and be installed directly on the drywall surface using simple springs. A choice of clear or frosted lenses are available. For channel dimensions, see page 18.

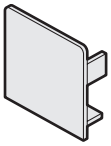
Options



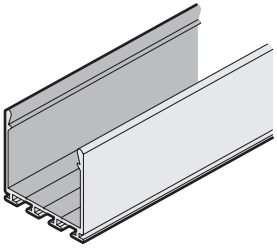
Flex drywall mount *for ½ " (12.5mm) panels*
(3.28' / 1m)
[FLK DWM]



Mount end cap
[FLK DWM EC]



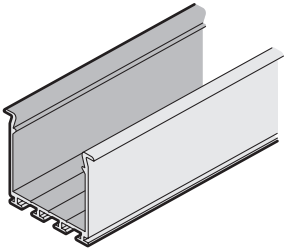
Channel end cap
[FLK DWC EC]



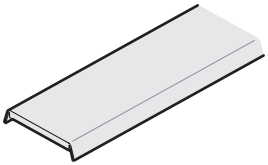
Flex drywall channel
(3.28' / 1m)
[FLK DWC]

Surface spring
[FLK DWC SS]

Mounting clip
[FLK DWM CLIP]



Flex drywall channel with flange
(3.28' / 1m)
[FLK DWF]



Lenses (3.28' / 1m)
[Clear: FLK DCL]
[Frosted: FLK DFL]

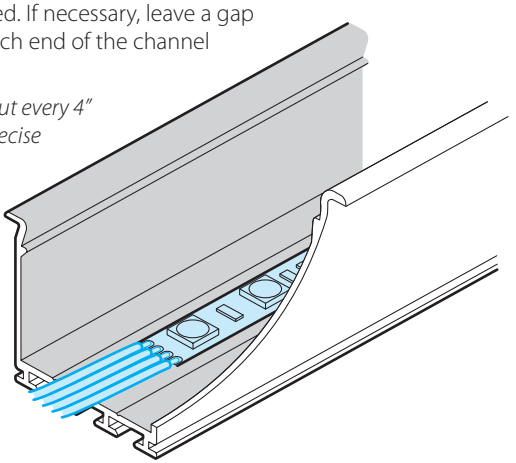
TO FIT THE FLEX SPECTRUM TAPE

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

2 Ensure the tape mounting surface within the channel is completely dry, clean and free of grease. If cleaning is required, please see page 4 for details.

3 Determine the length of tape required. If necessary, leave a gap at each end. 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.



4 Cut the tape to the nearest marked cutpoint.

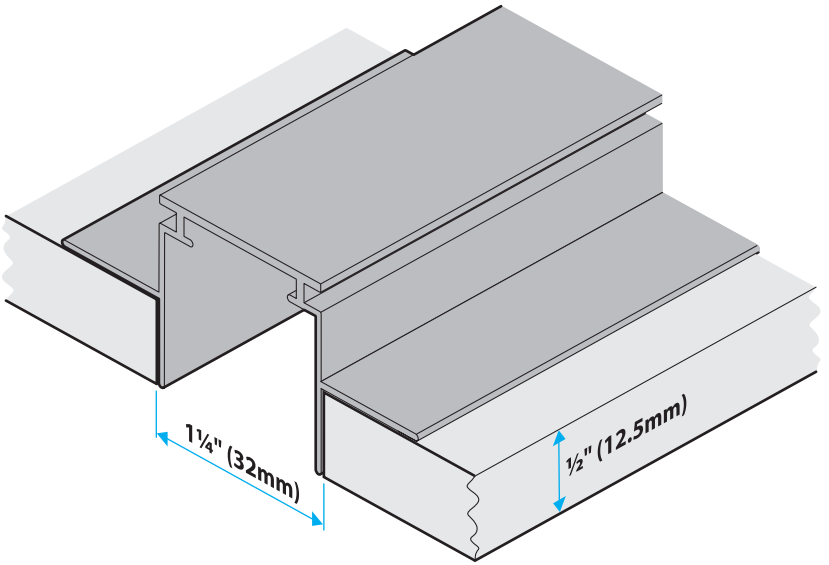
5 If necessary, carefully solder to the contact pads (see page 5).

6 Begin peeling the backing from the Flex Spectrum tape and carefully stick the Flex Spectrum tape into the channel, starting at the marked position.

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

TO RECESS A CHANNEL WITHIN A DRYWALL CEILING

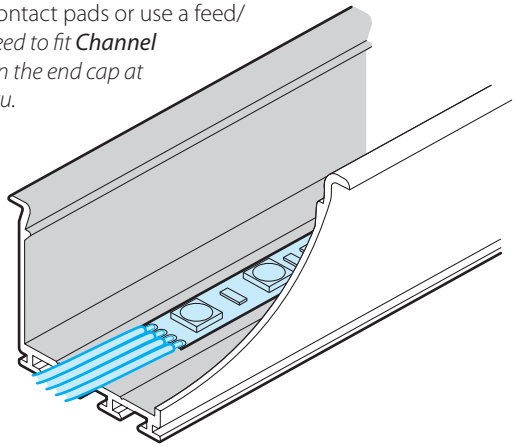
1 Make a gap within the drywall ceiling panels (measuring 1¼" / 32mm wide x the length of the channel). Place the *Flex drywall mount* into the gap so the wings of the mount rest on the ceiling panels. *Note: If required, fit* ***Mount end caps*** *at each end of the mount.*



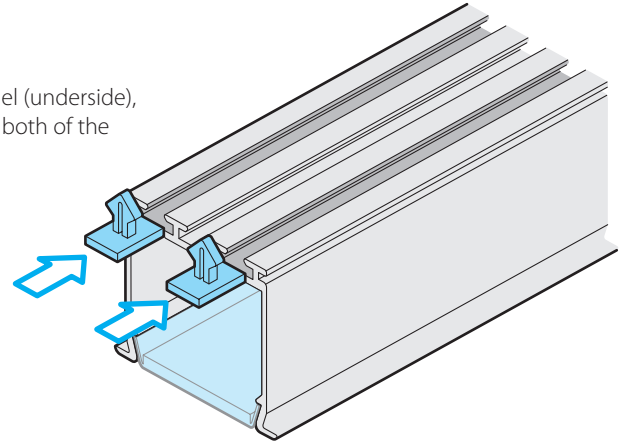
2 If necessary, carefully solder to the contact pads or use a feed/link cable (see page 5). *Note: If you need to fit* ***Channel end caps****, you will need to drill a hole in the end cap at one end to allow the cables to pass thru.*

3 Fit the Flex Spectrum tape to the channel (see page 14).

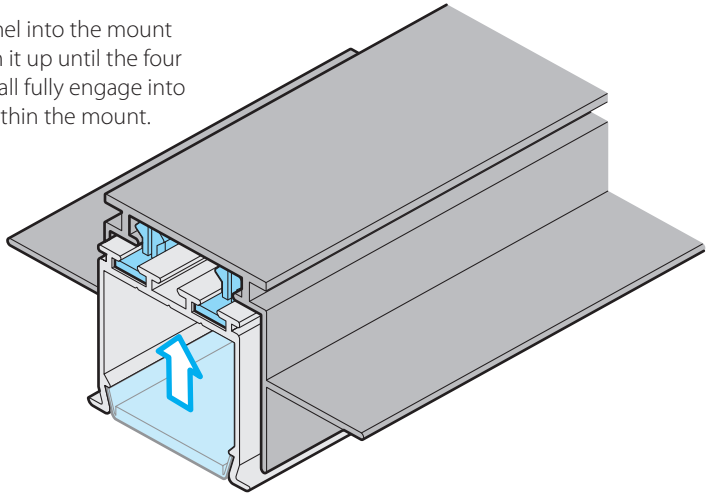
4 Fit the required lens (see page 17).



5 At each end of the channel (underside), insert *Mounting clips* into both of the outer slots.



6 Insert the channel into the mount and gently push it up until the four mounting clips all fully engage into the main slot within the mount.

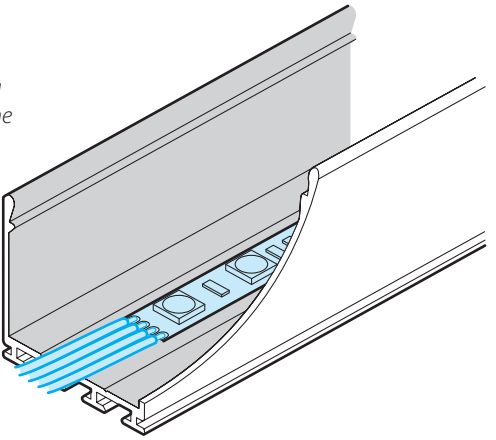


TO SURFACE MOUNT A CHANNEL ON A DRYWALL CEILING

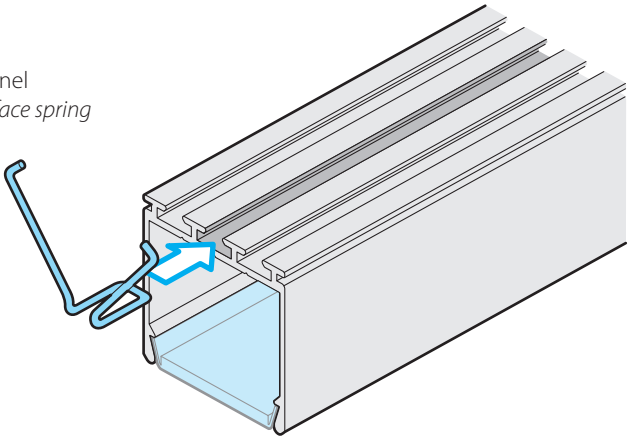
1 If necessary, carefully solder to the contact pads or use a feed/link cable (see page 5). *Note: If you need to fit* ***Channel end caps****, you will need to drill a hole in the end cap at one end to allow the cables to pass thru.*

2 Fit the Flex Spectrum tape to the channel (see page 14).

3 Fit the required lens (see page 17).

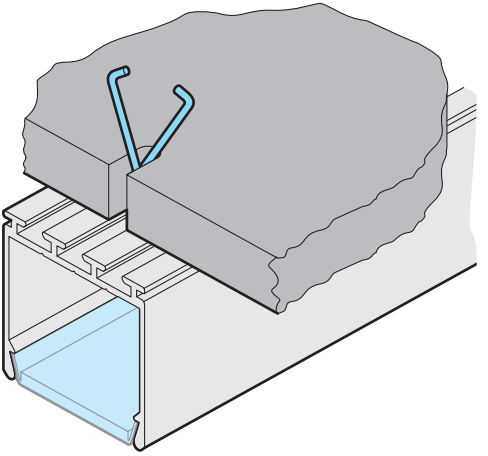


4 At each end of the channel (underside), insert a *Surface spring* into the center slot.



5 Measure the distance between the two springs and in the ceiling panels make two small holes to accommodate the springs.

6 At each end of the channel, squeeze the springs and insert them into the holes in the ceiling panel. Once inside, the springs should open out to keep the channel securely in position.



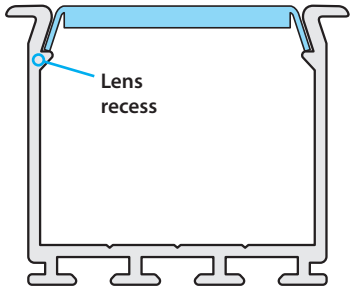
TO FIT A LENS

1 Measure the exact length of lens required between the ends of the channel.

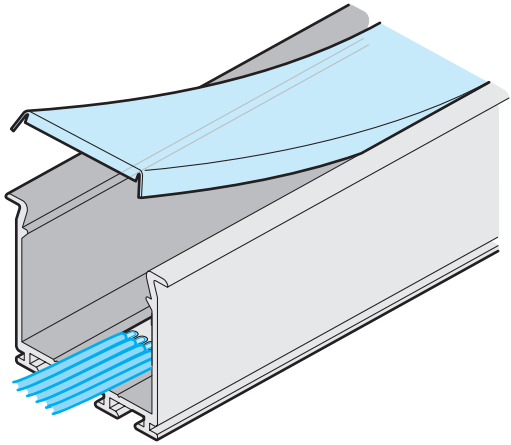
2 Carefully cut the lens to length. Ensure that any resulting burrs are removed.

3 Insert one end of the lens so that it locates into the 'Lens recess' within the channel (see right).

4 Once the first part of the lens has correctly located, run your thumb gently along the length of the lens to push the remainder into place.



Locate the first section of lens into the channel and then run your thumb along it to push the remainder into place.



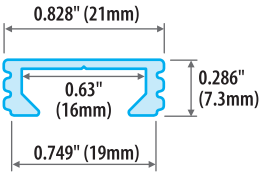
FURTHER INFORMATION

CHANNEL DIMENSIONS

FLX444, FLX777 and FLX888 channels (and their respective lenses) are supplied in lengths of 4' (1.21mm), whereas drywall channels and lenses are supplied in lengths of 3.28' (1m).

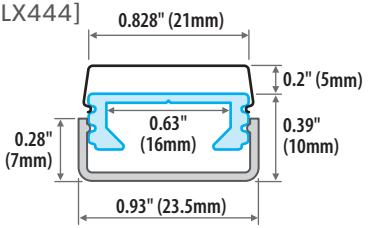
FLEX CHANNEL LOW PROFILE

[FLX444]



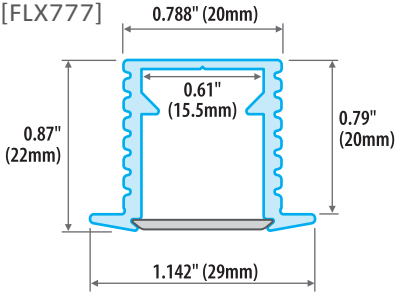
FLEX CHANNEL LOW PROFILE (WITH LENS & CLIP ATTACHED)

[FLX444]



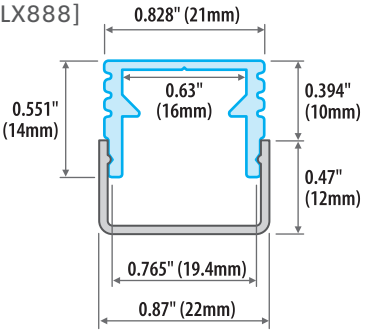
FLEX CHANNEL RECESSED

[FLX777]



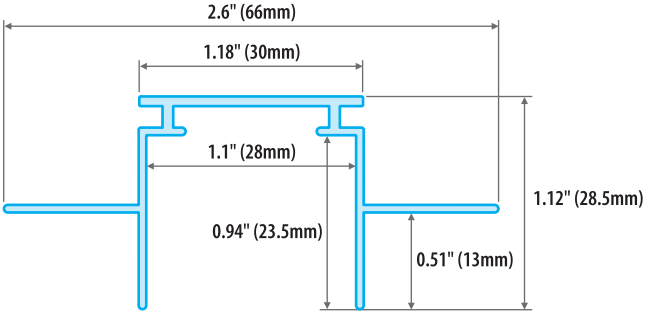
FLEX CHANNEL TALL PROFILE

[FLX888]

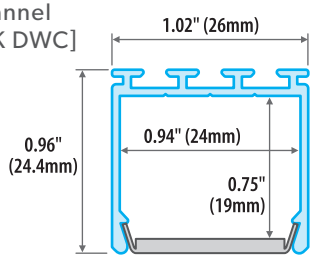


FLEX DRYWALL CHANNEL

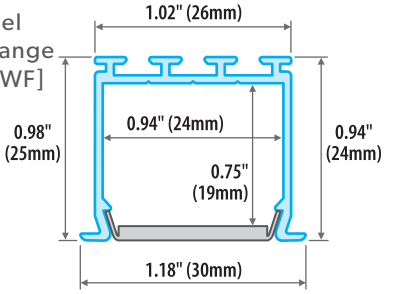
Mount
[FLK DWM]



Channel
[FLK DWC]



Channel
with flange
[FLK DWF]



FLEX SPECTRUM INTERIOR 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	5.4W per foot 18W per meter 90W per 16.4' (5m) spool
Dimming control	Pulse width modulation
Maximum overall length	16.4' (5m)
Ingress protection	IP20 (dry location)
Dimensions (W x H x L)	0.47" x 0.12" x 16.4' 12 x 3 x 5000mm
Operating temperature	32°F to 104°F 0°C to 40°C
Housing	Copper strip, white coating 3M™ VHB™ adhesive backing
Certifications	ETL C US, CE, RoHS

MOUNTING SURFACE ADVICE

The 3M™ VHB adhesive applied to the back of Flex Spectrum tapes provides adhesion to a wide variety of surfaces. Advice for the preparation of certain surfaces is given below.

WOOD, PARTICLE BOARD AND CEMENT SURFACES

Rough, porous or fibered materials such as wood, particleboard, cement, etc., have an open surface and require sealing to provide a unified surface for tape bonding. Common sealing materials include paint, varnish or other hard surface coatings. Fast drying 3M™ Rubber and Vinyl Spray 80 can also be used to unify the surface and improve the tape bond.

GLASS, STONE, CERAMIC AND RUBBER SURFACES

Glass, stone, ceramic or other siliceous materials are hydrophilic (water-loving) by nature. Normally, the hydrophilic nature makes pressure sensitive adhesive bond durability susceptible to change under high humidity or exposure to moisture. In basic terms, water vapor can undercut the tape bond and interfere with the normal adhesion forces. Silane coupling agents, added to the IPA/water cleaning solution, can help reduce the "water-loving" tendency of these surfaces and enhance the tape bond in high moisture environments.

COPPER, BRASS AND BRONZE SURFACES

Copper, brass, and bronze are prone to oxidation even after the tape is applied. To prevent a weakening of the bond, a lacquer or varnish should be applied to these surfaces. Be sure to test the tape bond to the sealer on a metal surface to verify good adhesion.

PVC AND RUBBER SURFACES

Flexible PVC (vinyl) contains plasticizers that can migrate into the tape and affect adhesion. 3M™ Scotch-Grip™ Plastic Adhesive 2262, thinned, can serve as a barrier to migration. Rubber materials (e.g. EPDM, neoprene) can have low surface energy and may also contain plasticizers and oils. These require the use of an adhesion promoter for stable bond strength. Test for compatibility with flexible PVC and rubber materials by aging bonded samples for a week at 150°F (66°C) and check for softening of the adhesive, discoloration or reduction in bond strength.

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 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