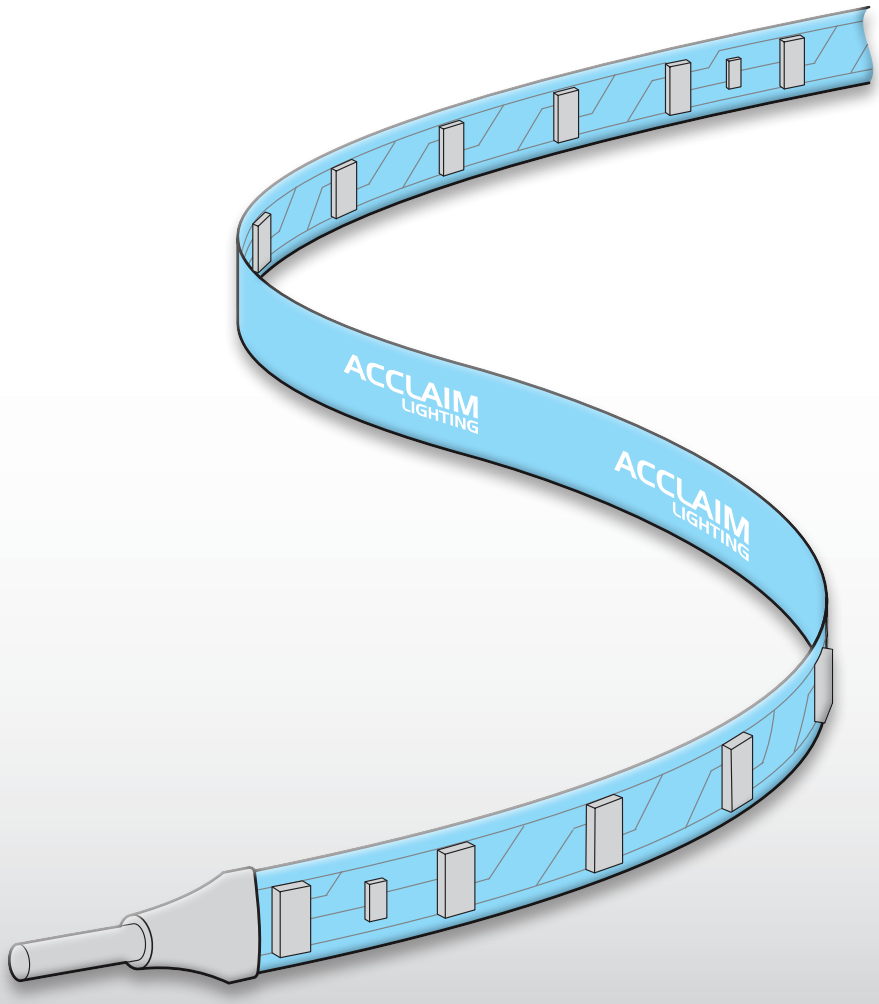
ACCLAIM
LIGHTING




# Flex III Interior

User guide

# Contents

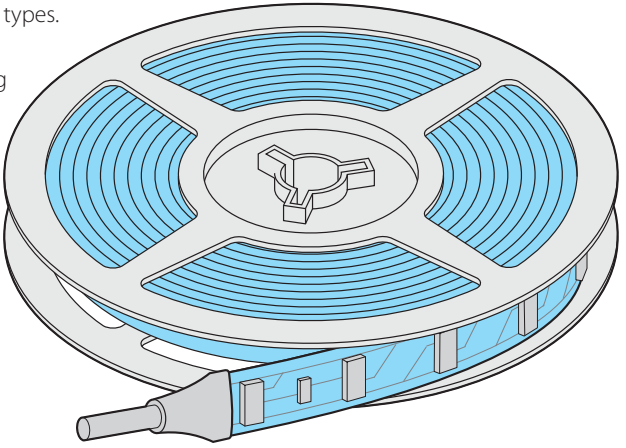
# Introduction

## Welcome

Welcome to the Flex III 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 III Interior tape provides a choice of three Correlated Color Temperature (CCT) options from 2700K to 3500K, each boasting a very high Color Rendering Index (CRI) of up to 98. Self-adhesive backing ensures quick and effective mounting on many surface types.

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



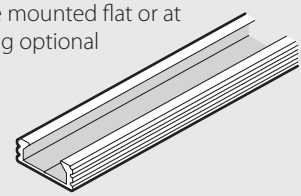
## Safety

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

## Channel types

**Flex 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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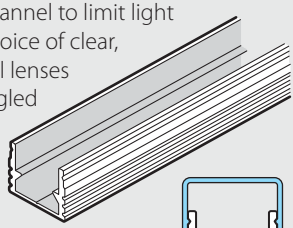
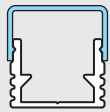
**Flex channel tall profile** [FLX888]

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





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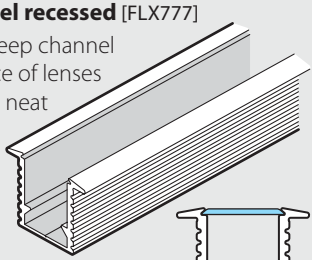
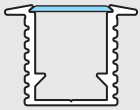
**Flex channel recessed** [FLX777]

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

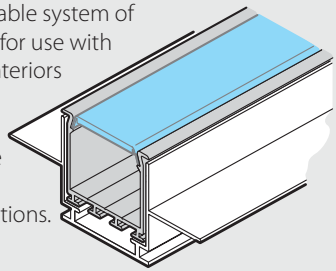




Page 10

**Flex dry wall channel** [FLK DWM]

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



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# Installation

Flex III Interior tapes are supplied with 3M 300LSE 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 700 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.*

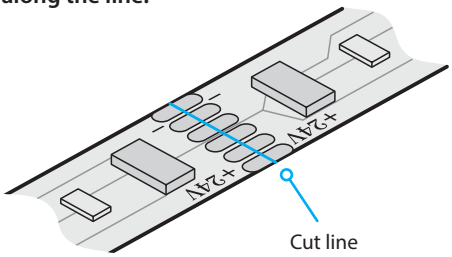
## Cutting and connecting the tape

Flex III tapes are supplied with 3.3 feet (1 meter) bare tails at both ends.

### To cut the tape

Flex III 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

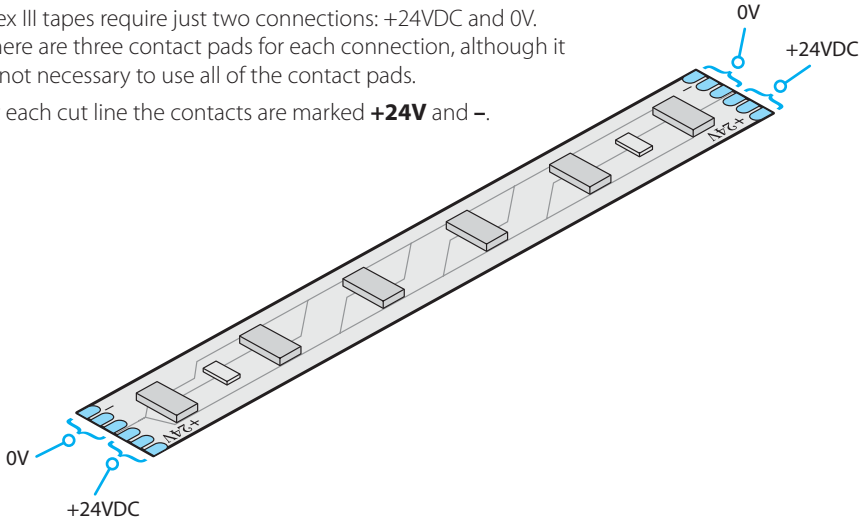
Once cuts are made to a Flex III tape, then connections need to be made to the new sections. Either side of each cut line are bare copper contact pads where you can make connections either by soldering feed wires (see below).

*Note: When soldering, minimize the time spent heating the tape to avoid damage to the nearby components.*

#### Contact pads

Flex III tapes require just two connections: +24VDC and 0V. There are three contact pads for each connection, although it is not necessary to use all of the contact pads.

At each cut line the contacts are marked **+24V** and **–**.



## Powering and dimming Flex III tapes

Flex III tapes are run at 24VDC and their consumption requirements are as follows:

| | *per foot* | *per meter* | *per 16.4' (5m) spool* |
|---|---|---|---|
| Current | 0.18A | 0.59A | 2.92A |
| Power | 4.2W | 14W | 70W |

*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 III tapes to the power/driver unit should follow these guidelines (based on a load of 2.92A for 16.4'/5 meters of Flex III tape):

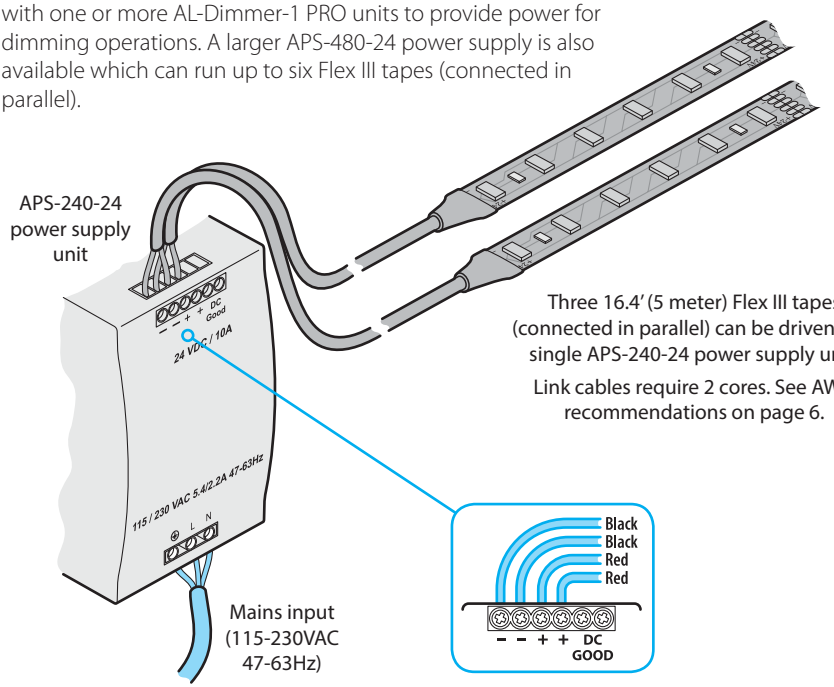
- Up to 40 feet (12m) 18 AWG (0.823mm$^2$)
- Up to 100 feet (30m) 14 AWG (2.081mm$^2$)
- Up to 180 feet (55m) 12 AWG (3.309mm$^2$)

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 III power supplies and drivers

### APS-240-24

This DIN-rail 240W power supply can power up to three 16.4' (5 meter) Flex III spools. It could also be used in conjunction with one or more AL-Dimmer-1 PRO units to provide power for dimming operations. A larger APS-480-24 power supply is also available which can run up to six Flex III tapes (connected in parallel).



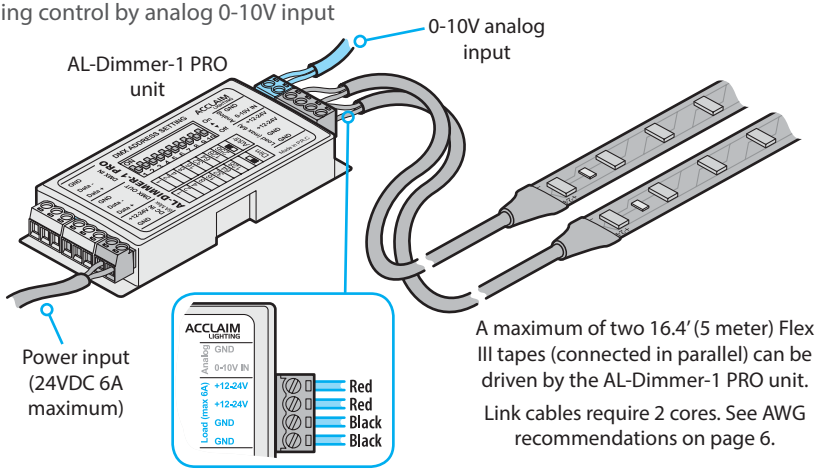

Three 16.4' (5 meter) Flex III tapes (connected in parallel) can be driven by a single APS-240-24 power supply unit.

Link cables require 2 cores. See AWG recommendations on page 6.

## AL-Dimmer-1 PRO

This compact unit measures just 3.5" x 1.6" x 0.8" and provides dimming control for Flex III tapes from either analog 0-10V **or** digital DMX control inputs. The AL-Dimmer-1 PRO unit requires a 24VDC power supply (such as the Acclaim Lighting APS-150-24 or APS-240-24) and can drive up to two 16.4' (5 meter) spools.

### Dimming control by analog 0-10V input

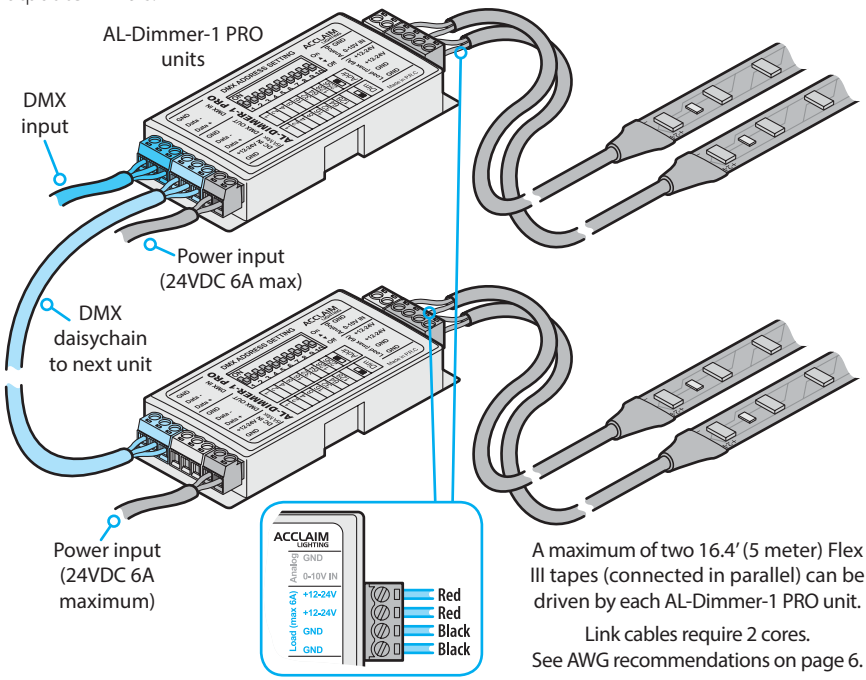



A maximum of two 16.4' (5 meter) Flex III tapes (connected in parallel) can be driven by the AL-Dimmer-1 PRO unit.

Link cables require 2 cores. See AWG recommendations on page 6.

### Dimming control (and control daisy chaining) by DMX

Up to 32 AL-Dimmer-1 PRO units can be daisy chained on a single unbuffered DMX line. The final unit in the daisy chain should be terminated by a 120Ω resistor across the Data + and – output terminals.



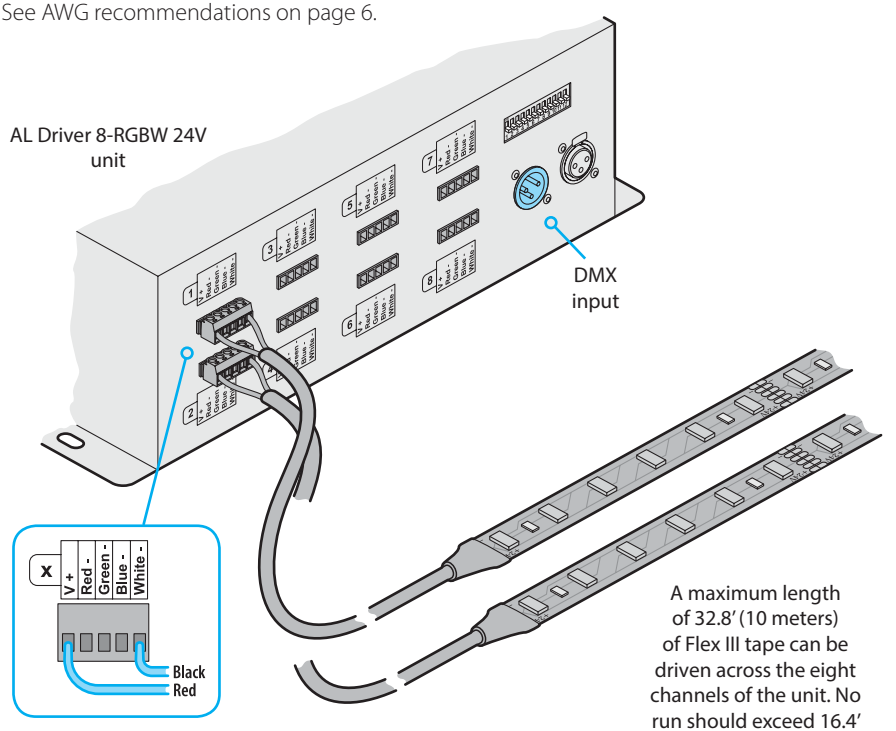

A maximum of two 16.4' (5 meter) Flex III tapes (connected in parallel) can be driven by each AL-Dimmer-1 PRO unit.

Link cables require 2 cores.
See AWG recommendations on page 6.

**AL Driver 8-RGBW 24V**

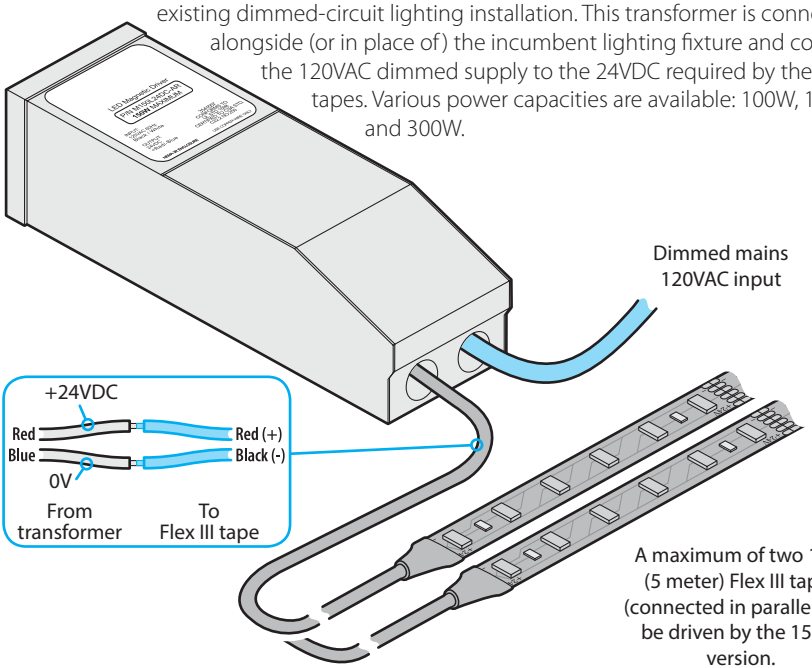
This combined power supply and driver provides dimming control for multiple Flex III tapes from a DMX input.

See AWG recommendations on page 6.



**M-Series 24V dimmable transformer**

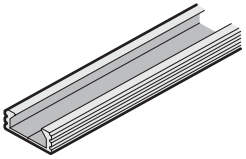
This magnetic transformer is designed to allow Flex III tapes to be integrated into an existing dimmed-circuit lighting installation. This transformer is connected alongside (or in place of) the incumbent lighting fixture and converts the 120VAC dimmed supply to the 24VDC required by the Flex III tapes. Various power capacities are available: 100W, 150W and 300W.



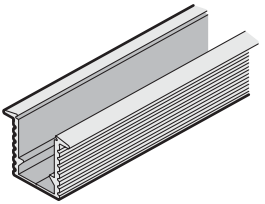
## Flex channel - low profile/recessed/tall (FLX444/777/888)

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 19.

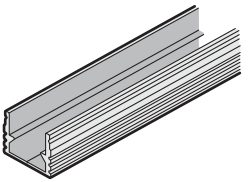
**Options**



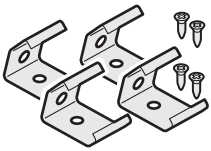
**Flex channel low profile**
(4' / 1.21m)
[FLX444]



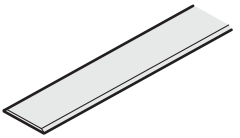
**Flex channel recessed**
(4' / 1.21m)
[FLX777]



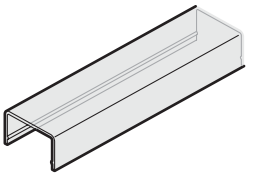
**Flex channel tall profile**
(4' / 1.21m)
[FLX888]



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

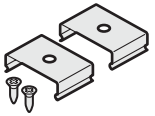


**Recessed lenses** (4' / 1.21m)
[Clear: FLX727]
[Frosted: FLX715]
[Opal: FLX702]



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

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



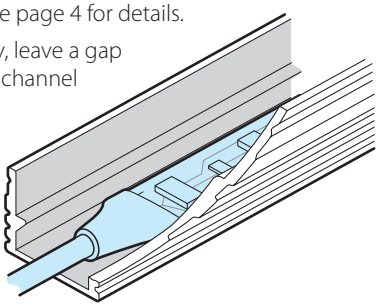
### To fit the Flex III tape

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 III tape can only be cut every 4" (100mm) and this may mean that a precise length of Flex III 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.*

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

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

## To surface mount directly

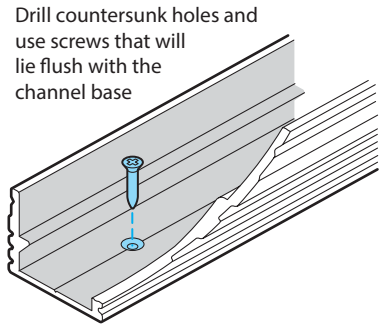
1 Before fitting the Flex III tape, determine where the channel is to be mounted.

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 III tape to the channel (see Page 10).

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




## To surface mount using brackets

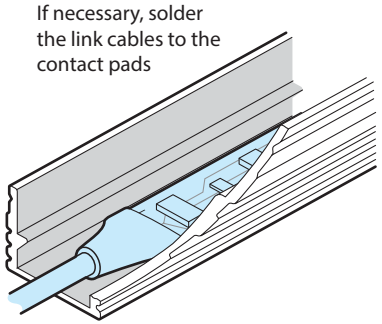
1 If necessary, carefully solder to the contact pads (see page 5).

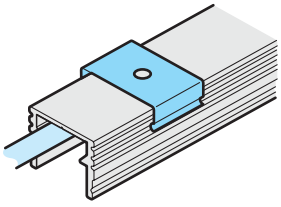
2 Fit the Flex III tape to the channel (see Page 10).

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.

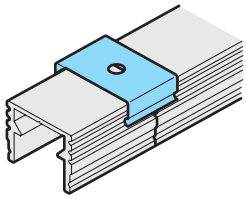
The angled bracket can be used in either of two orientations to provide an angle of either 30 or 45 degrees to the mounting surface (as shown below).

4 Clip the channel into the mounting brackets:

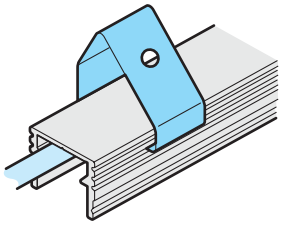


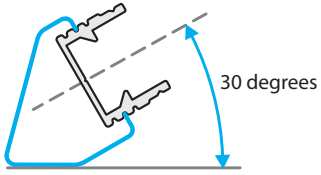
Attaching a flat bracket

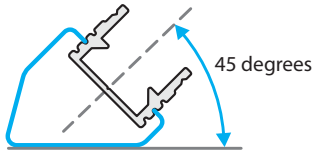


Using a flat bracket to join two channels



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

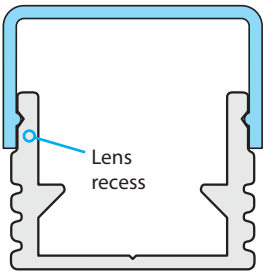
## To fit a lens

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

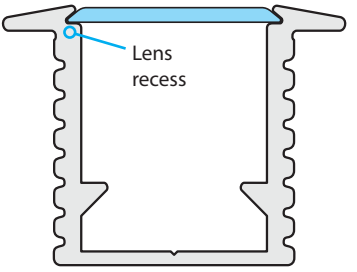
2 Carefully cut the lens to length. Ensure that any resulting burrs are removed.

3 Depending on the channel type:

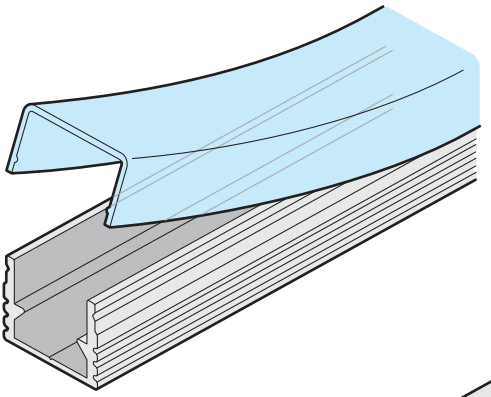
- **Tall profile**: Place one end of the lens over the channel so that it slots into the 'Lens recess' (see right). Then run your hand along the length of the lens to gently push the remainder into place.
- **Recessed**: Insert one end of the lens into the 'Lens recess' within the channel (see right). Then slide the remaining lens into the recess.



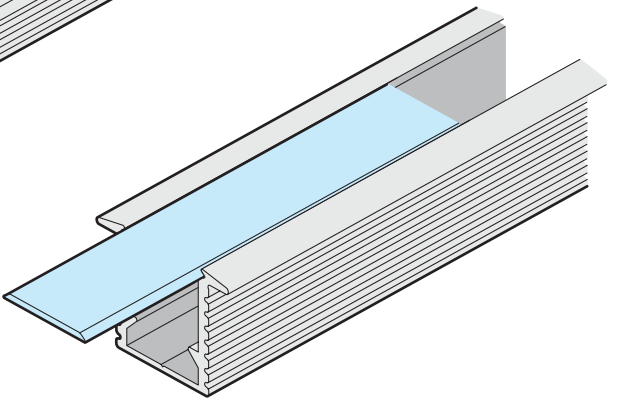

**Tall profile**
**[FLX888]**




**Recessed**
**[FLX777]**



**Tall profile**
**[FLX888]**

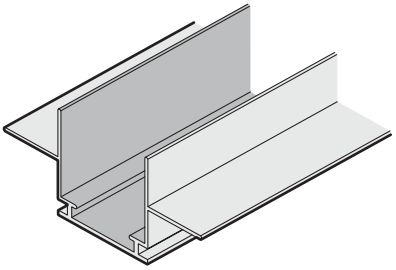


**Recessed**
**[FLX777]**

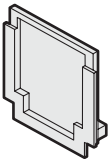
## Flex drywall channel (FLK DWM/DWC/DWF)

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 III 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 19.

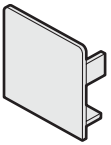
### Options



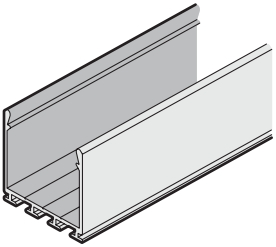
**Flex drywall mount** *for ½ " (12.5mm) panels*
(3.28' / 1m)
[FLK DWM]



**Mount end cap**
[FLK DWM EC]



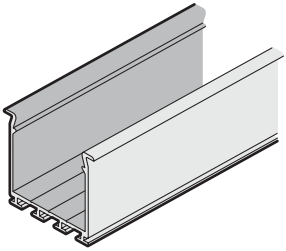
**Channel end cap**
[FLK DWC EC]



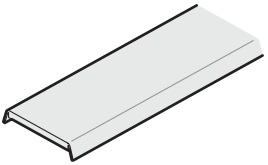
**Flex drywall channel**
(3.28' / 1m)
[FLK DWC]

**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]

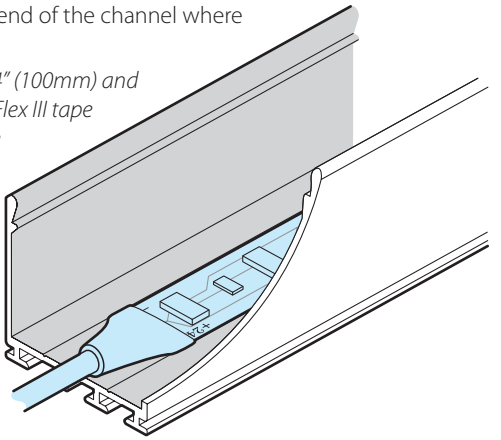
## To fit the Flex III tape

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 III tape can only be cut every 4" (100mm) and this may mean that a precise length of Flex III 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.

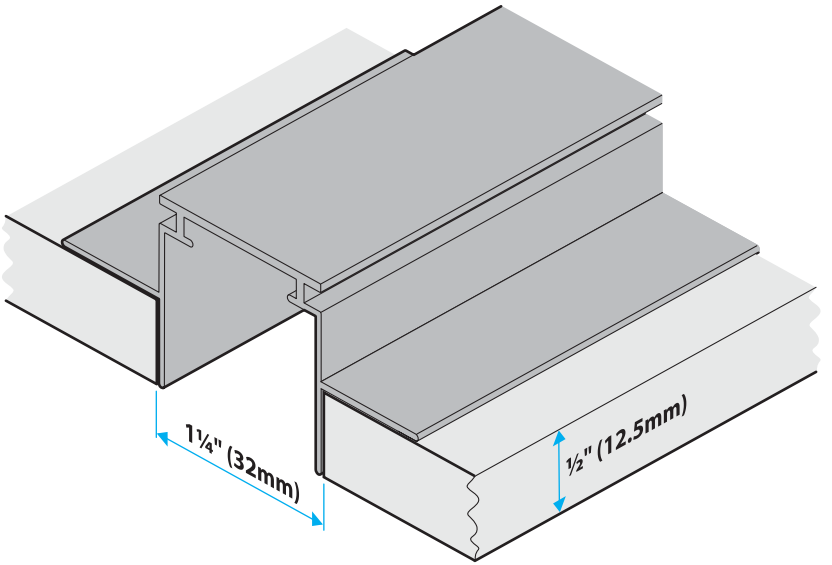
5 If necessary, carefully solder to the contact pads (see page 5).

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

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

## To recess a channel within a drywall ceiling

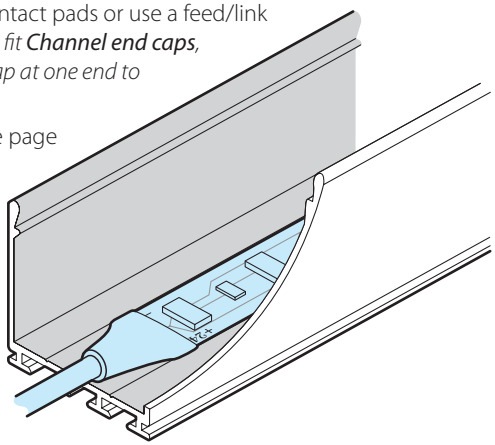
1 Make a gap within the drywall ceiling panels (measuring 1¼" / 32mm wide x the length of the channel). Place the *Flex drywall mount* into the gap so the wings of the mount rest on the ceiling panels. *Note: If required, fit* ***Mount end caps*** *at each end of the mount.*



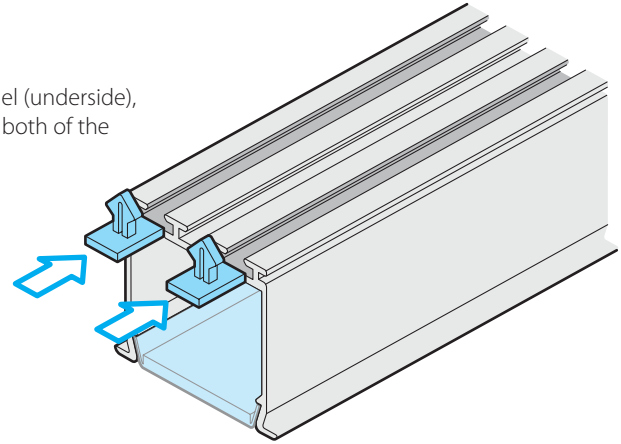
2 If necessary, carefully solder to the contact pads or use a feed/link cable (see page 5). *Note: If you need to fit* ***Channel end caps****, you will need to drill a hole in the end cap at one end to allow the cable to pass thru.*

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

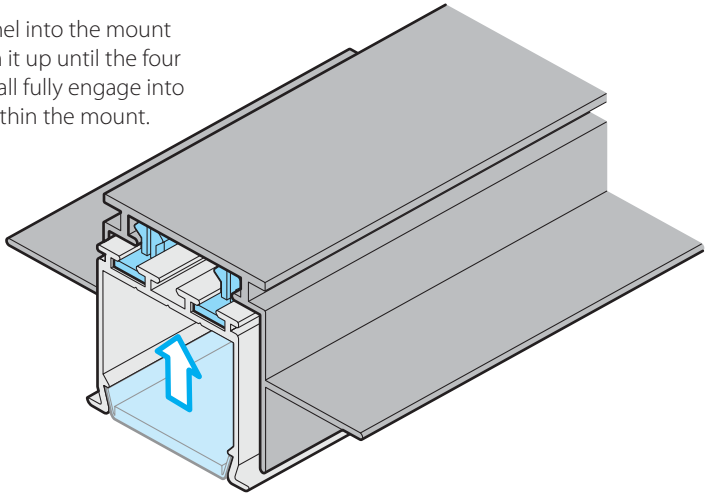
4 Fit the required lens (see page 17).



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.

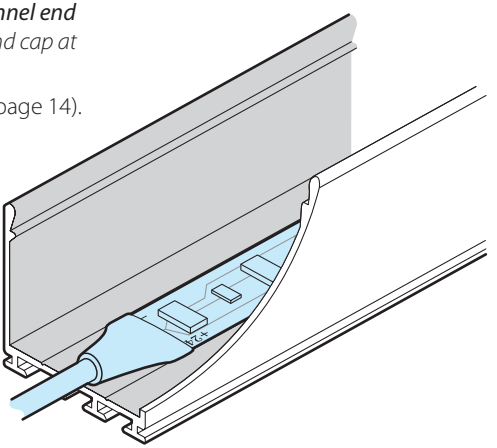


## To surface mount a channel on a drywall ceiling

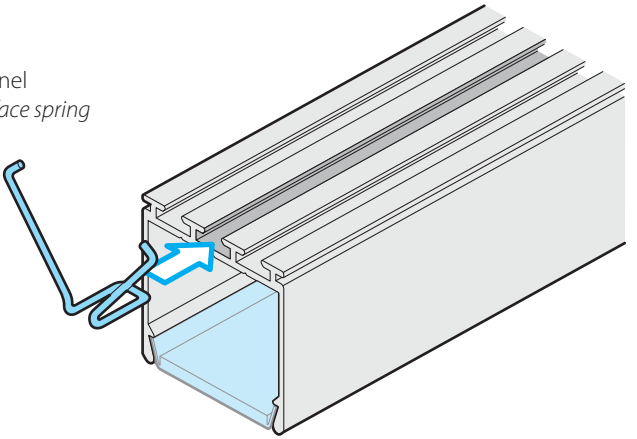
1 If necessary, carefully solder to the contact pads (see page 5). *Note: If you need to fit* ***Channel end caps****, you will need to drill a hole in the end cap at one end to allow the cable to pass thru.*

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

3 Fit the required lens (see page 17).

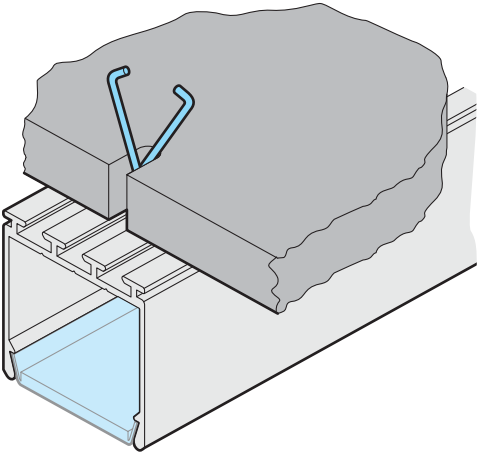


4 At each end of the channel (underside), insert a *Surface spring* into the center slot.



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.



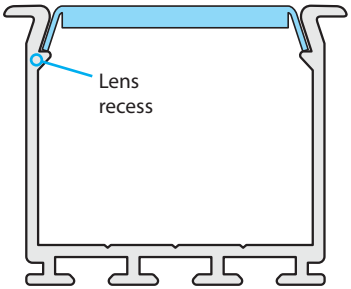
## To fit a lens

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

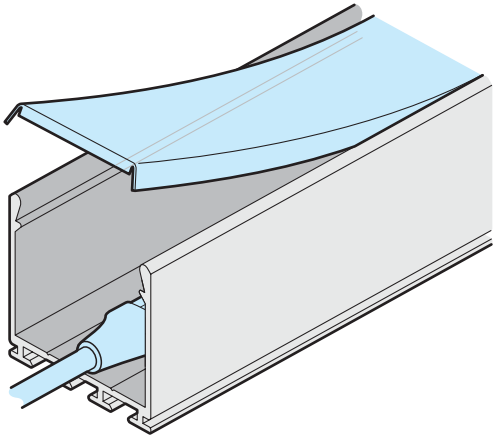
2 Carefully cut the lens to length. Ensure that any resulting burrs are removed.

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

## Flex III Interior specifications

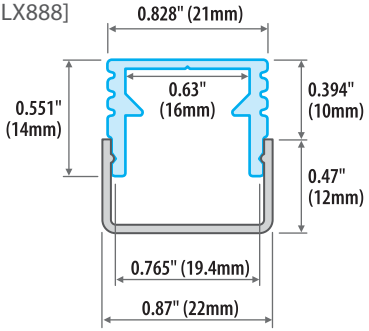
| | |
|---|---|
| Beam angle | 120° |
| Color temperature (CCT) | 2700K, 3000K or 3500K |
| Illuminance (lm/ft²) | 297 @ 2700K<br>304 @ 3000K<br>344 @ 3500K |
| Efficacy (lm/W) | 67 @ 2700K<br>69 @ 3000K<br>76 @ 3500K |
| Color Rendering Index (CRI) | 98 @ 2700K<br>98 @ 3000K<br>94 @ 3500K |
| Lumen maintenance ($L_{70}$) | 50,000 hours (25°C max) |
| Operating voltage | 24VDC |
| Power consumption | 4.2W per foot<br>14W per meter<br>70W per 16.4' (5m) spool |
| Dimming control | Pulse width modulation |
| Maximum overall length | 16.4' (5m) |
| Dimensions (W x H x L) | 0.56" x 0.18" x 16.4'<br>14.3 x 4.7 x 5000mm |
| Operating temperature | 32°F to 104°F<br>0°C to 40°C |
| Housing | Copper strip, white coating<br>3M adhesive backing |
| Certifications | ETL C US LISTED INTERTEK · CE · RoHS |

## Channel dimensions

- FLX444, FLX777 and FLX888 (and their respective lenses) are all supplied in lengths of 4' (1.21mm).
- FLK DWM, FLK DWC and FLK DWF (and their respective lenses) are all supplied in lengths of 3.28' (1m)

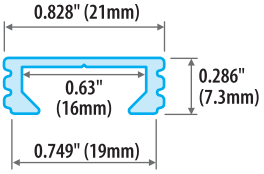
### Flex channel tall profile

[FLX888]



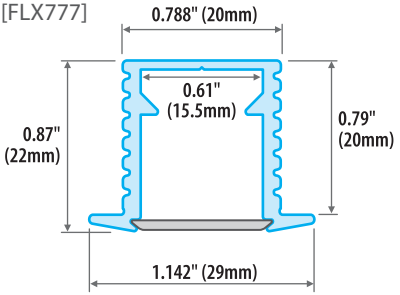

### Flex channel low profile

[FLX444]



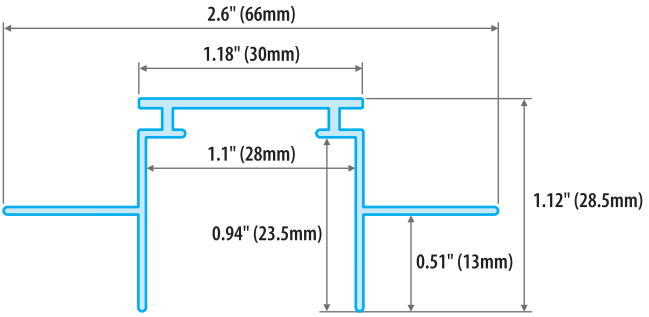

### Flex channel recessed

[FLX777]

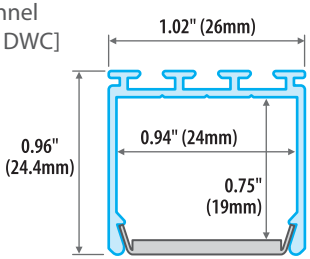



### Flex drywall channel

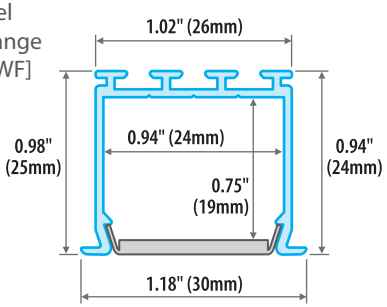
Mount
[FLK DWM]




Channel
[FLK DWC]




Channel
with flange
[FLK DWF]



## Mounting surface advice

The 3M™ VHB adhesive applied to the back of Flex III 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.
- 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