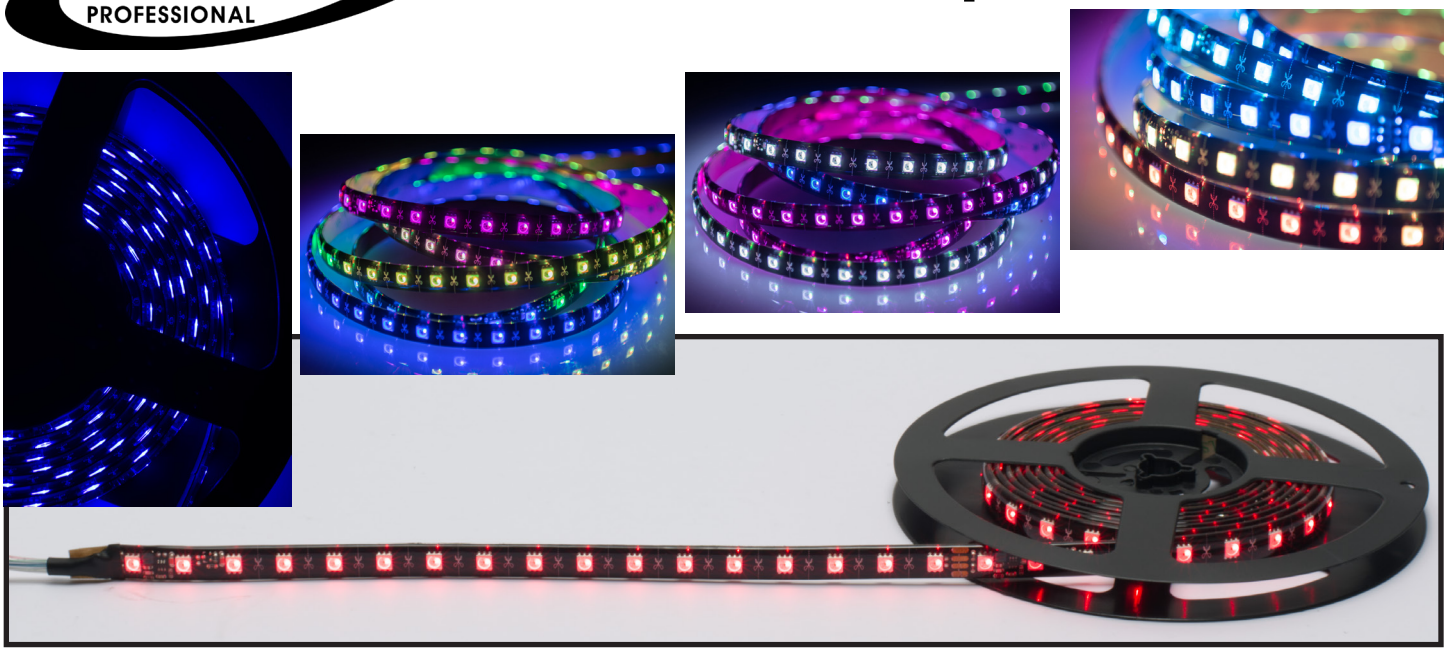
Pixel Tape 16IP



The Pixel Tape 16IP™ is an IP65, outdoor rated, 8.9 foot (2.7m) flexible LED pixel tape featuring (170) RGB SMD tri-color LED pixels (510 total DMX channels), producing over 1 billion color possibilities with a 120° viewing angle, and is surface coated with an IP65 rated PC glue. Pixel Tape 16IP's can be powered and controlled using our Pixel Driver 170, Pixel Driver 1000IP, or Pixel Driver 4000 V2. Tapes include 3M Outdoor Adhesive.

SPECIFICATIONS:

SOURCE:	APA102/RGB
LIGHT OUTPUT:	455 Lumens
OPERATING VOLTAGE:	DC24V
POWER CONSUMPTION:	35W Max.
LED SPACING:	16mm
LED QUANTITY PER TAPE:	170 pieces
MAXIMUM TAPE RUNS:	3 Tapes
CONTROL SYSTEMS:	DMX512, ARTNET, sACN, and KlingNet
IP RATED:	IP65

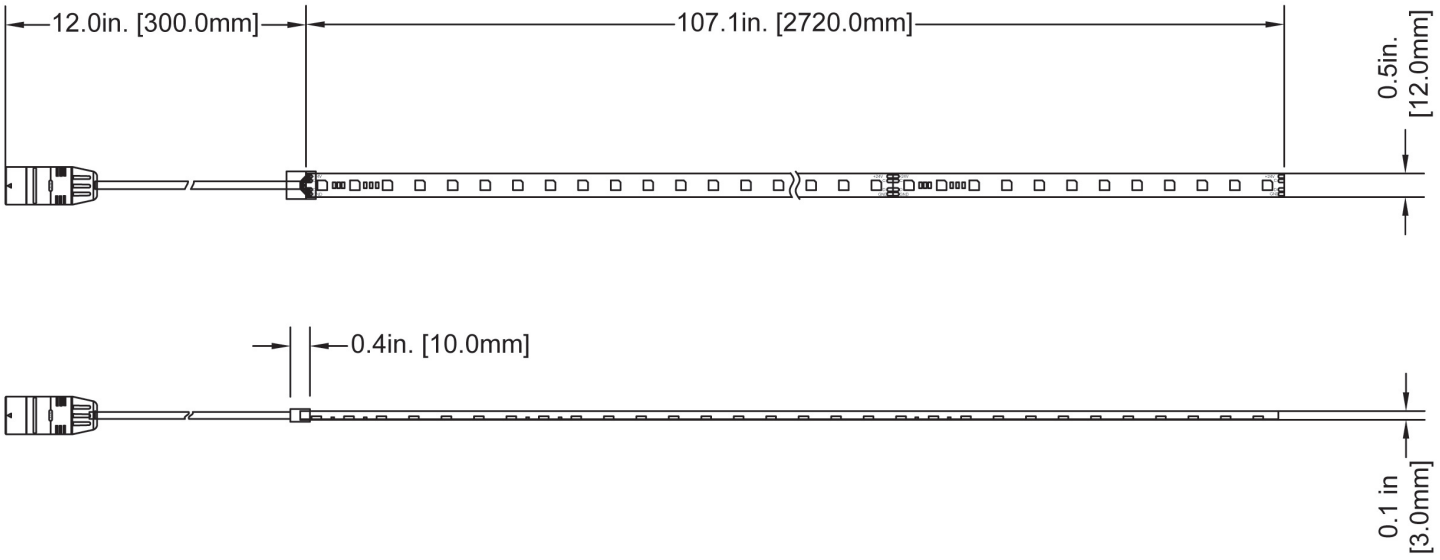
IP65

An IP rated lighting fixture is one that is commonly installed in outdoor environments, and has been designed with an enclosure that effectively protects the ingress (entry) of external foreign objects such as dust and water. The International Protection (IP) rating system is commonly expressed as "IP" (Ingress Protection) followed by two numbers (i.e. IP65) where the numbers define the degree of protection. The first digit (Foreign Bodies Protection) indicates the extent of protection against particles entering the fixture and the second digit (Water Protection) indicates the extent of protection against water entering the fixture. An IP65 rated lighting fixture is one, which has been designed and tested to protect against the ingress of dust (6) and low-pressure water jets from any direction (5).

Elation Professional USA | 6122 S. Eastern Ave. | Los Angeles, CA. 90040
323-582-3322 | 323-832-9142 fax | www.elationlighting.com | info@elationlighting.com

Elation Professional B.V. | Junostraat 2 | 6468 EW Kerkrade, The Netherlands
+31 45 546 85 66 | +31 45 546 85 96 fax | www.elationlighting.eu | info@elationlighting.eu

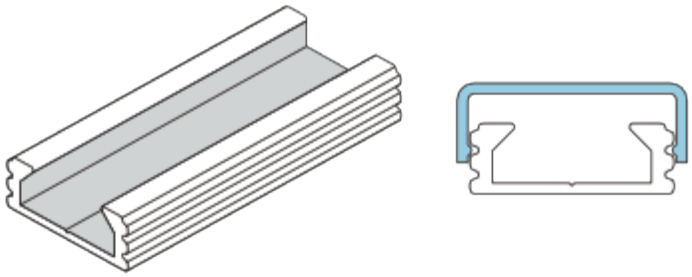
Elation Professional Mexico | AV Santa Ana 30 | Parque Industrial Lerma, Lerma, Mexico 52000
+52 (728) 282-7070



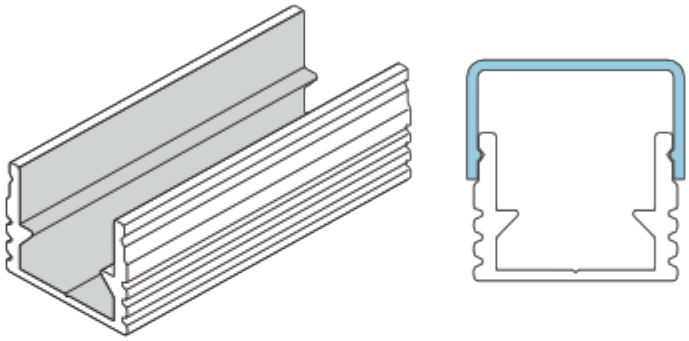
INSTALLATION

OPTIONAL CHANNEL TYPES

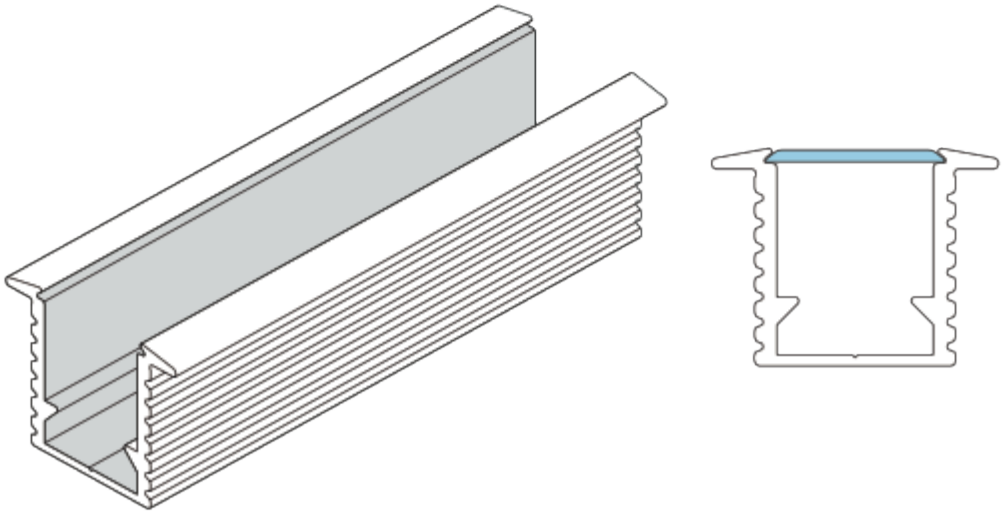
Flex channel low profile [FLX444]: A low profile channel that can be mounted flat, or angled using optional fixing kits.



Flex channel tall profile [FLX888]: A tall sided channel to limit light spill, with a choice of clear, frosted or opal lenses plus flat or angled mounting options.



Flex channel recessed [FLX777]: A flanged deep channel, with a choice of lenses, to provide a neat finish when recessed within a surface.

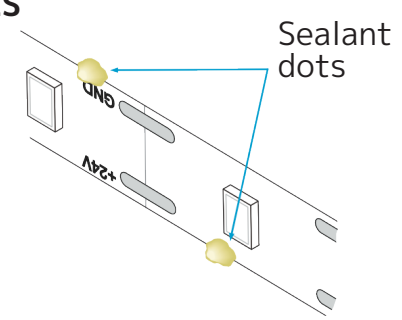


INSTALLATION

MOUNTING

Elation Pixel Tape 16IP 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 Pixel Tape 16IP (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 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.

INSTALLATION

MOUNTING SURFACE ADVICE
The 3M™VHB adhesive applied to the back of Pixel 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.

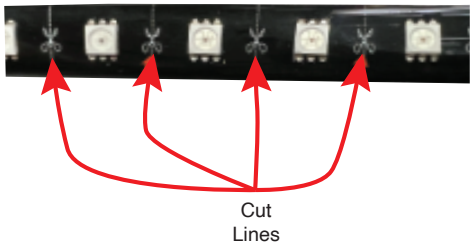
- **PVC AND RUBBER SURFACES**
  Flexible PVC (vinyl) contains plasticizers that can migrate into the tape and affect adhesion. 3M™ Scotch-Grip™ Plastic Adhesive 2262, thinned, can serve as a barrier to migration. Rubber materials (e.g. EPDM, neoprene) can have low surface energy and may also contain 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.

INSTALLATION

IMPORTANT: Do not cut the tape anywhere other than the specified cut lines, copper pads, or soldered contact points! Be sure to cut cleanly through the outer silicone layer while following the indicated cut line as closely as possible.

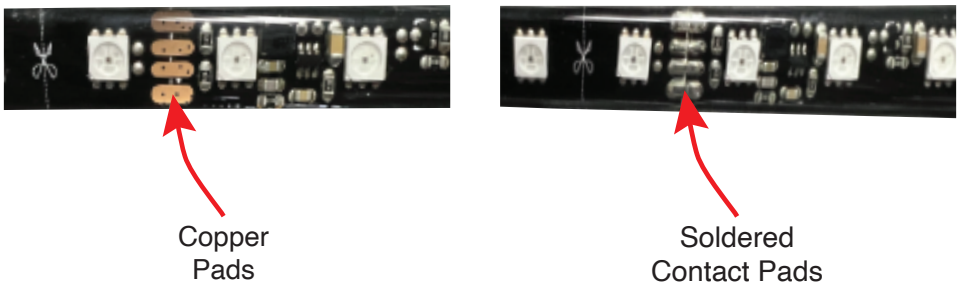
CUTTING TAPE DOWN TO A DESIRED LENGTH

The Pixel Tape series are designed to be trimmed to the desired length at clearly indicated cut lines, which are marked with a scissor logo. The Pixel Tape 16IP features a cut line every 0.62 inches (16mm). Remember, these designated “cut” lines are intended solely for trimming the tape to your desired length.



CUTTING AND EXTENDING TAPE

The tape can also be cut and extend as needed. When extending Pixel Tape 16IP tape, cuts can be made through the center of either the copper pads or soldered pads, as indicated below. These pads are spaced at intervals of 10.7 inches (272mm).



CONNECTING TAPE

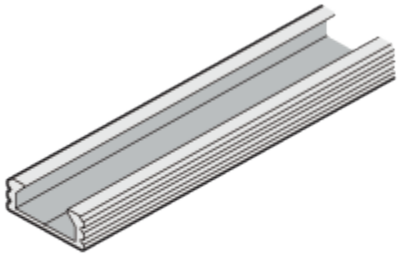
Once the desired cuts have been made, connections must be established for the new segments. The copper or soldered contact pads that have been cut can now serve as connection points for linking additional tape segments, or for attaching feed wires.

1. Once the cut in the tape has been made, carefully use a sharp knife to carefully remove the outer silicone layer around the contact pads. Gradually remove small portions of silicone, being careful not to cut into the tape itself.
2. Use a soldering iron to solder feed or link cables to the contact pads. Try to minimize the time the tape is exposed to the heat from the soldering process, in order to avoid the risk of potential damage to nearby components.
3. To protect against water infiltration, employ Dow Corning® 799, 1199, or an equivalent silicone sealant. Apply the sealant such that it forms a comprehensive seal around the exposed tape, connections, and cables. Ideally, this sealing process should be performed once the Pixel Tape 16IP is securely fixed in place, but it is also possible to apply the sealant before installation. Allow ample time for the sealant to fully set before disturbing the tape.

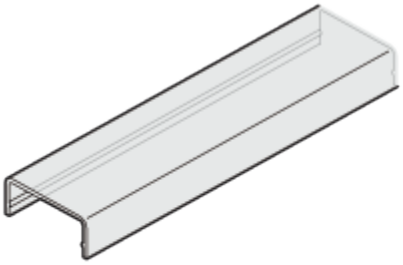
INSTALLATION - FLEX CHANNEL LOW PROFILE

This low profile option is ideal for mounting within tight spaces. There is a choice of clear, frosted or opal lenses.

Options

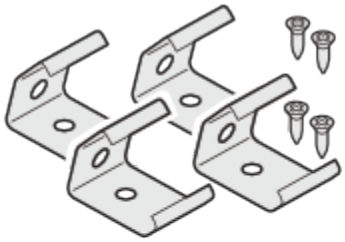


Flex channel low profile
(FLX444)

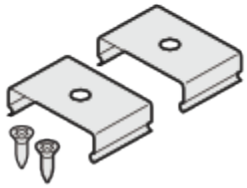


Low profile LENSES
[Clear: FLX LP CL4]
[Frosted: FLX LP CL4]
[Opal: FLX OL4]

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



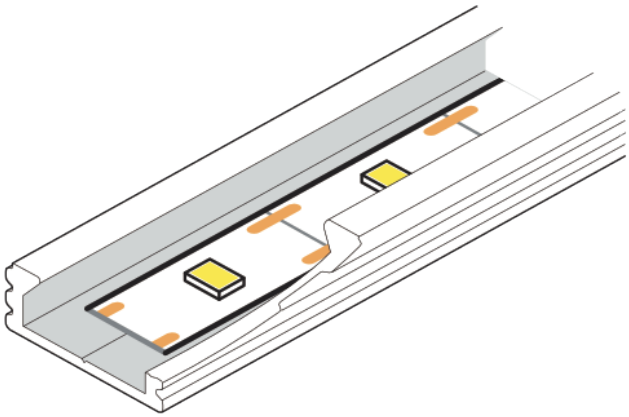
Flat brackets/ joiners plus 2.5 x 10mm wood screws
[FLX111]



TO FIT THE PIXEL TAPE 16IP

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.
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: Pixel Tape 16IP 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.



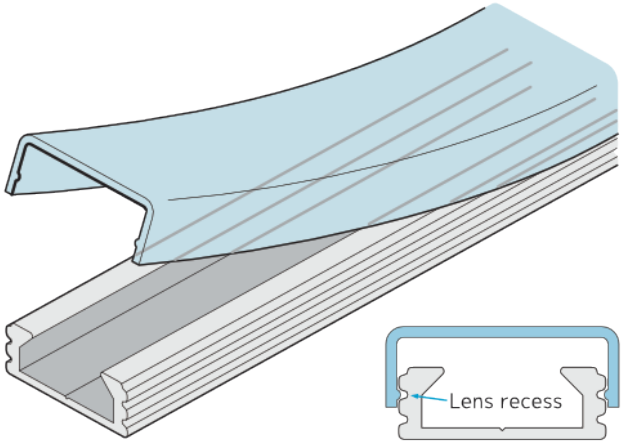
4. Cut the tape to the nearest marked cutpoint.
5. Note: If you are attaching the channel directly to a surface, see 'To surface mount directly' (see page 8) before sticking the tape in place.

   Begin peeling the backing from the Pixel Tape 16IP and carefully stick the Pixel Tape 16IP into the channel, starting at the marked position.

   IMPORTANT: While pressing the Pixel Tape 16IP 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'. Then run your hand along the length of the lens to gently push the remainder into place.
   Note: Lenses are UV stabilized.

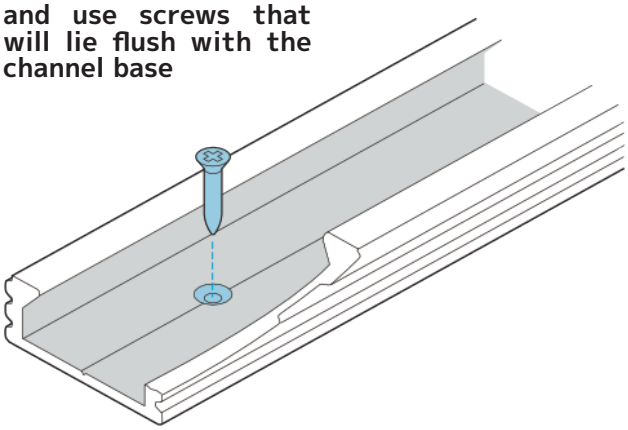


INSTALLATION - FLEX CHANNEL LOW PROFILE

TO SURFACE MOUNT DIRECTLY

1. Before fitting the Pixel Tape 16IP, 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 Pixel Tape 16IP to the channel.
5. Carefully solder to the contact pads, if necessary.

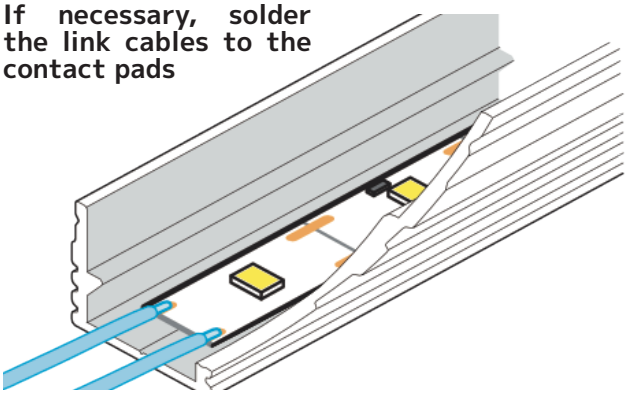
Drill countersunk holes and use screws that will lie flush with the channel base



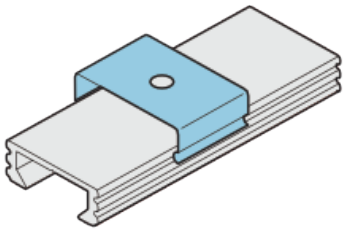
TO SURFACE MOUNT USING BRACKETS

1. If necessary, carefully solder to the contact pads or use a feed/link cable.
2. Fit the Pixel Tape 16IP to the channel.
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.
4. Clip the channel into the mounting brackets:

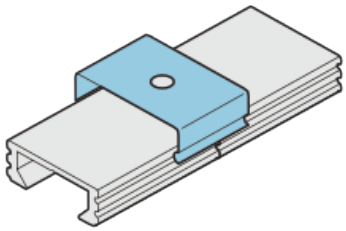
If necessary, solder the link cables to the contact pads



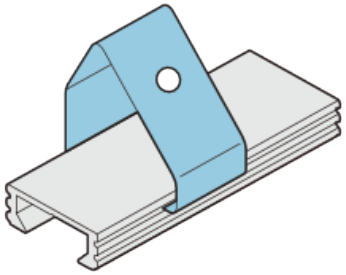
Note: Ensure sufficient strain relief where the cables enter the channel



Attaching a flat bracket



Using a flat bracket to join two channels



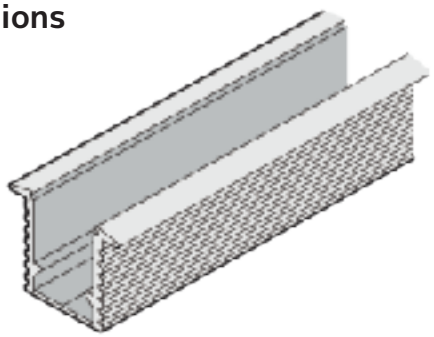
Attaching an angled bracket

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

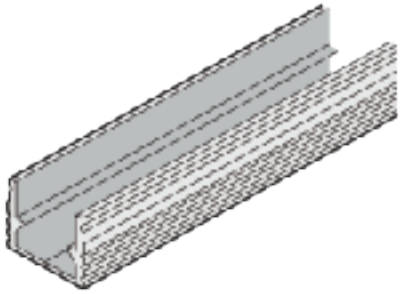
INSTALLATION - FLEX CHANNEL RECESSED/TALL

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.

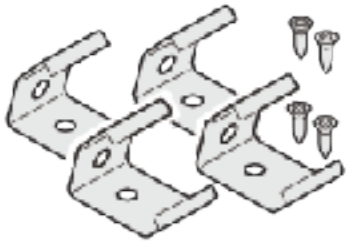
Options



Flex channel recessed
(FLX777)

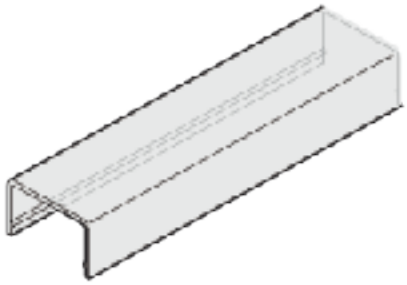


Flex channel tall profile
(FLX888)



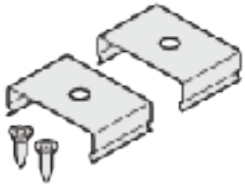
Angled brackets plus 2.5 x 10mm wood screws
[FLX113]

Recessed LENSES
[Clear: FLX727]
[Frosted: FLX715]
[Opal: FLX702]



Tall profile LENSES
[Clear: FLX825]
[Frosted: FLX813]
[Opal: FLX801]

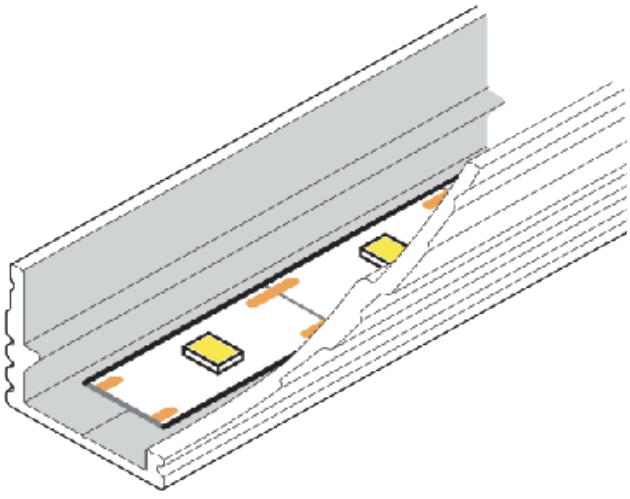
Flat brackets/ joiners plus 2.5 x 10mm wood screws
[FLX111]



TO FIT THE PIXEL TAPE 16IP

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.
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: Pixel Tape 16IP 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' (see page 10), in the following section, before sticking the tape in place.



Begin peeling the backing from the Pixel Tape 16IP and carefully stick the Pixel Tape 16IP into the channel, starting at the marked position.

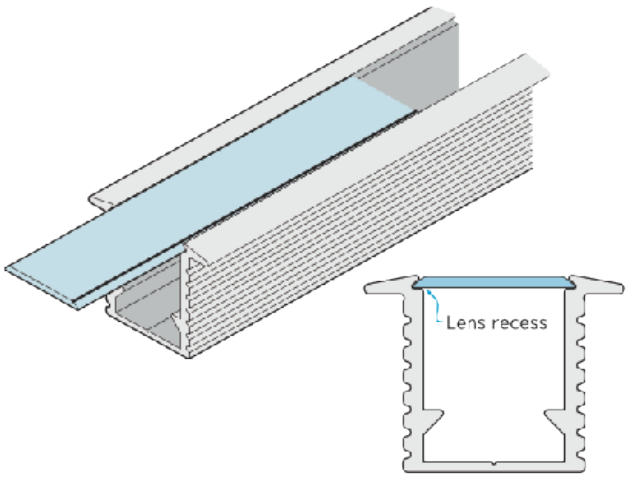
IMPORTANT: While pressing the Pixel Tape 16IP into position, take care not to put excessive pressure on the components or connections.

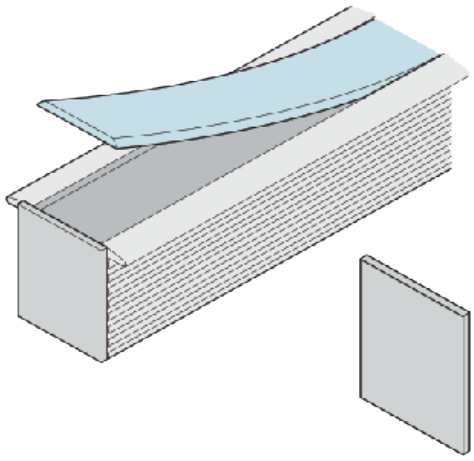
INSTALLATION - FLEX CHANNEL RECESSED/TALL

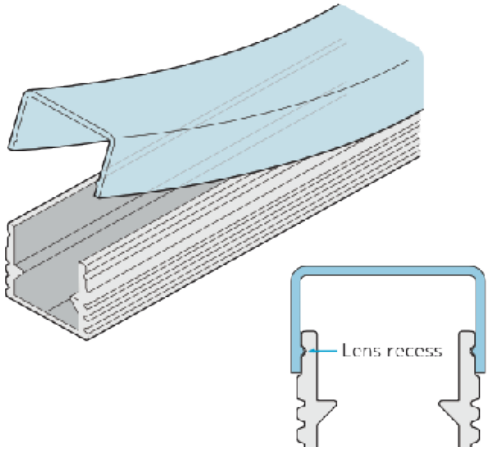
TO FIT A LENS

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.

Note: FLX777 and FLX888 channel lenses are UV stabilized.



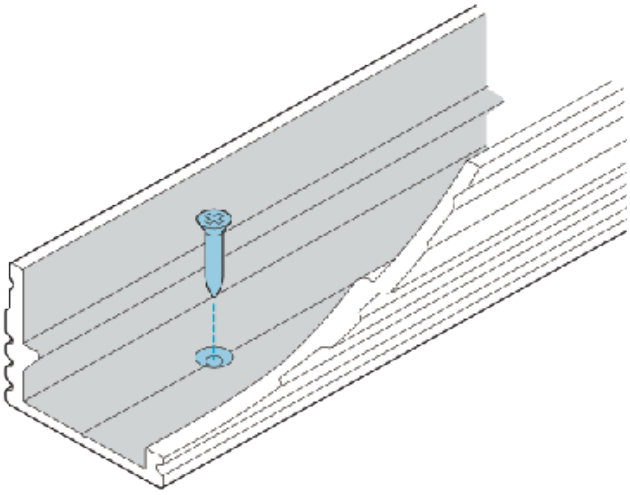




INSTALLATION - FLEX CHANNEL RECESSED/TALL

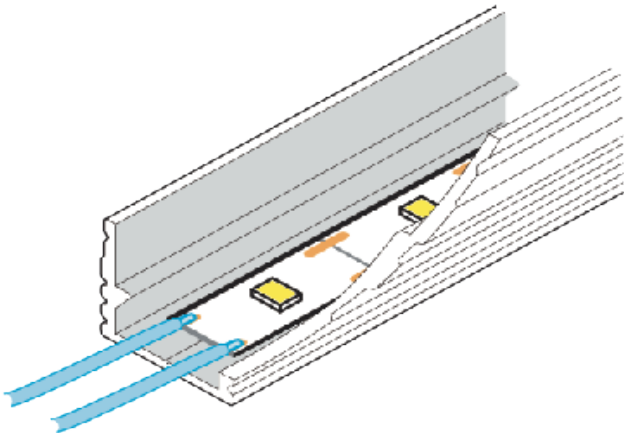
TO SURFACE MOUNT DIRECTLY

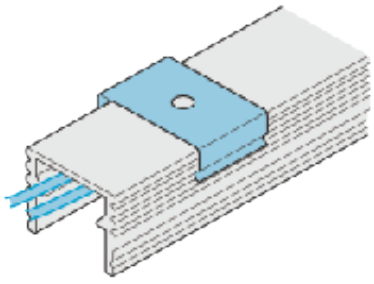
1. Before fitting the Pixel Tape 16IP, determine where the channel is to be mounted.
2. Drill the required number of holes in the base of the channel and countersink them.
   Note: A small groove runs down the center of each channel base to provide a guide for your drill.
3. Mount the channel and use countersunk screws to secure it.
   IMPORTANT: The screw heads must lie flush with the channel base.
4. Fit the Pixel Tape 16IP to the channel.
5. Carefully solder to the contact pads, if necessary.



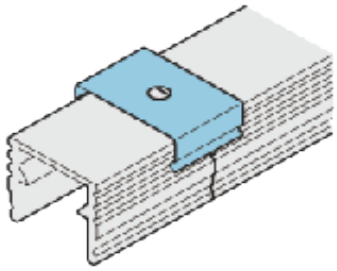
TO SURFACE MOUNT USING BRACKETS

1. If necessary, carefully solder to the contact pads or use a feed/link cable.
2. Fit the Pixel Tape 16IP to the channel.
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.
4. Clip the channel into the mounting brackets:

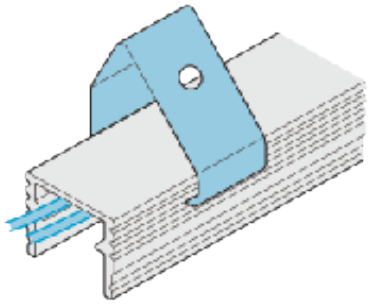




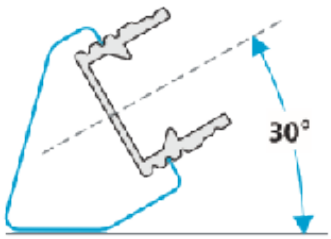
Attaching a flat bracket

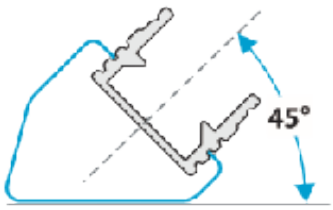


Using a flat bracket to join two channels



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

LINKING

MAXIMUM CABLE DISTANCES

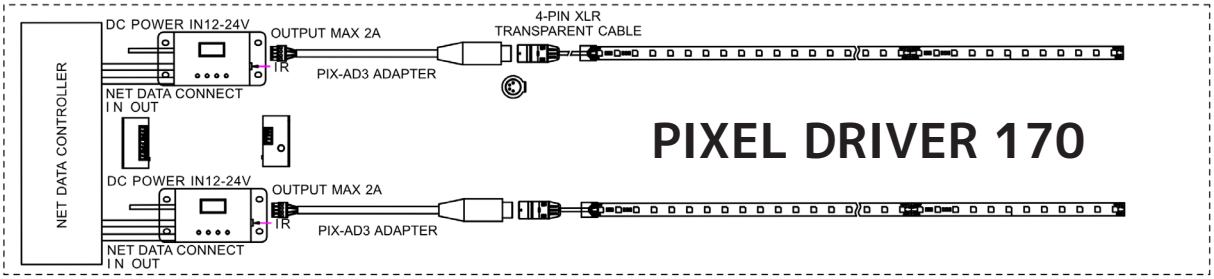
Cable Gauge	Connection Section	Max Length
16AWG	Driver to First Tape Segment	50 feet (18 meters)
	Tape Segment to Tape Segment	32 feet (10 meters)
	Total Combined Cable Length	98 feet (30 meters)
12AWG	Driver to First Tape Segment	50 feet (18 meters)
	Tape Segment to Tape Segment	32 feet (10 meters)
	Total Combined Cable Length	213 feet (65 meters)

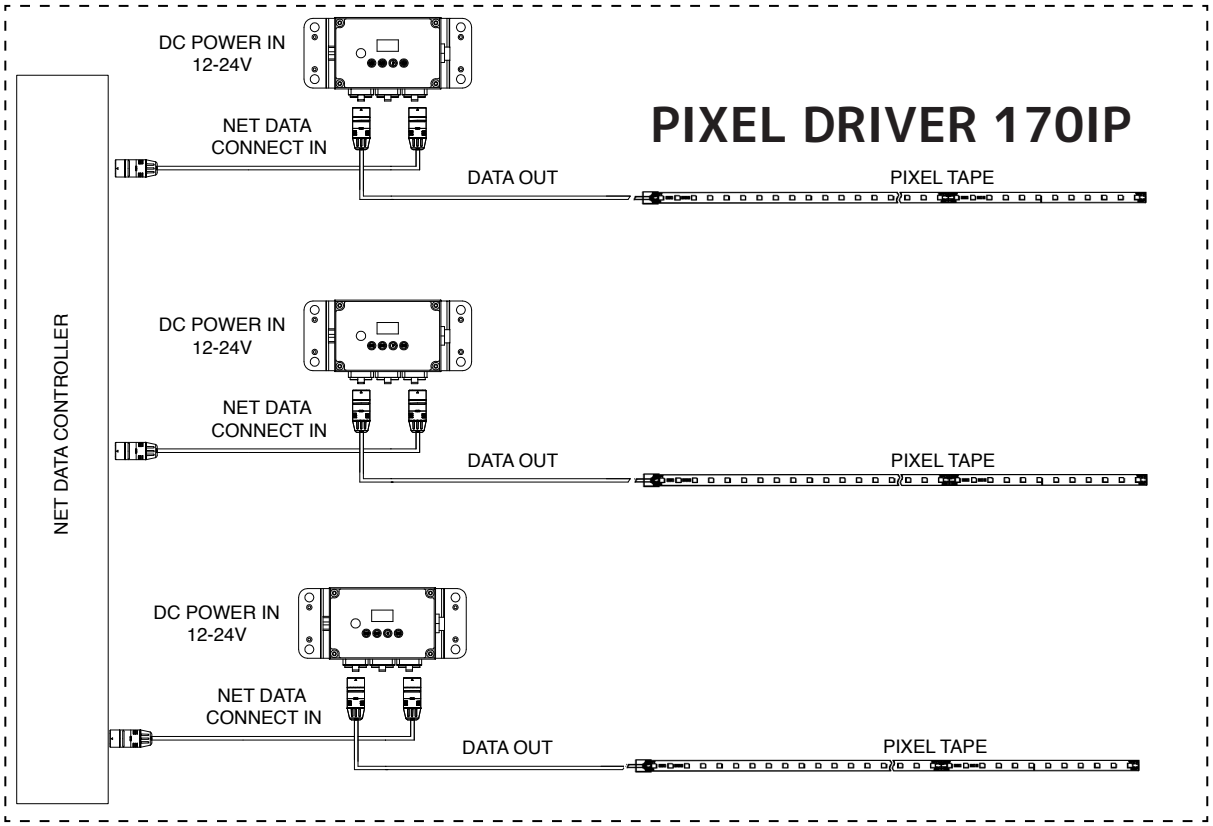
DRIVER OUTPUT LIMITATIONS

When using an **Elation Pixel Driver 4000 V3** or **Elation Pixel Driver 4000 V4** driver to control your Elation Pixel Tape 16IP or Elation Pixel Tape 40IP, the maximum number of tapes that can be controlled by the driver is listed below:

Model	Total Pixels	Total Control Channels	KLING-NET / ART-NET / sACM 850 Max Pixels per Driver Port 3400 Max Pixels per Driver Unit			
			Max Pieces per Driver Port	Max Pixels per Driver Port	Max Pieces per Driver Unit	Max Pixels per Driver Unit
Pixel Tape 16IP and Pixel Tape 40IP	170	510	5	850	20	3400

PIXEL DRIVER CONNECTION DIAGRAMS





PIXEL DRIVER CONNECTION DIAGRAMS