Neon Flex User Manual

IP68 SLW LED® FLEX NEON
(PRO-RGB-DMX)

Sign Lighting World
3265 Walnut St, Boulder, CO 80301
sales@SLWLED.com

720-242-9000
www.SLWLED.com

Table of Contents

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

LED Flex Neon PRO

The products are widely used in the illumination and decorative lighting for piazza, restaurants, private villas, gardens, conference rooms, exhibition halls, stage bars, shopping malls, parking structures, and tourist attractions.

A. Specification

1. Structure

Material: PVC Body
Input Voltage: 24VDC
LED Qty/m: 60pcs
Protection: IP68*
Work Temperature: -22F – 113F (-30C to 45C)
IK Class: IK08
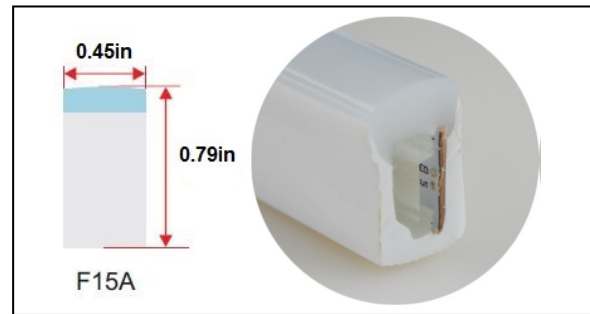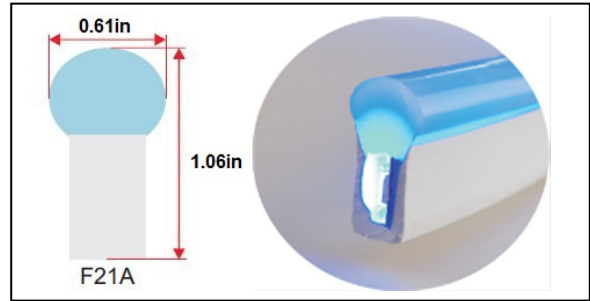
2. Model Configuration Table

Model NO.	LED Color	LEDs/Unit	Cutting Length	Power/m	Weight
F21A-24V	Y/G/B/WW/W/NW	6 pcs SMD/5050	4in (10cm)	12W	1lb/3.28ft 0.5kg/m
F21A-24V	R/O	10pcs SMD/5050	6.5in (16.67CM)	7.2W	1lb/3.28ft 0.5kg/m
F15A-24V	Y/G/B/WW/W/NW	6pcs SMD/5050	4in (10cm)	12W	.8lb/3.28ft 0.38kg/m
F15A-24V	R/O	10pcs SMD/5050	6.5in (16.67CM)	7.2W	1.5lbs/3.28ft 0.68kg/m

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

B. Photometric Parameters
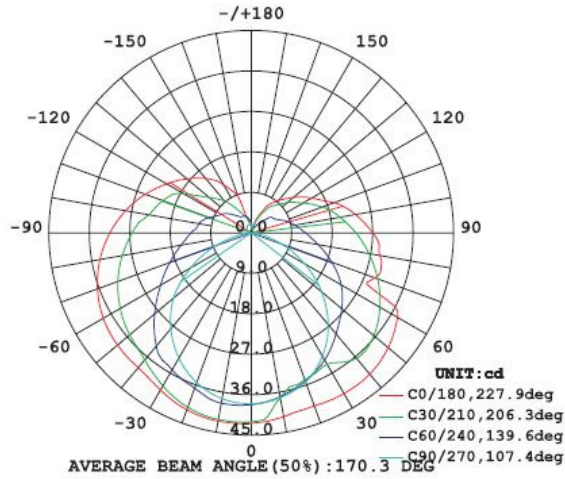
1. Model: F21A-6000K

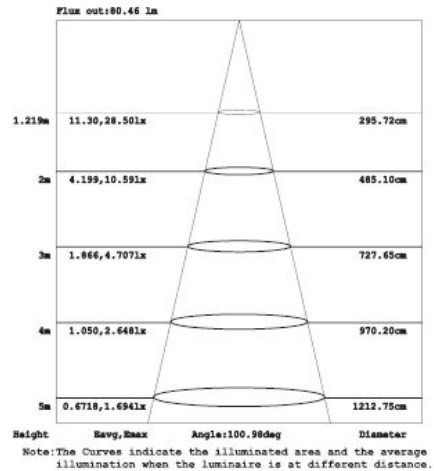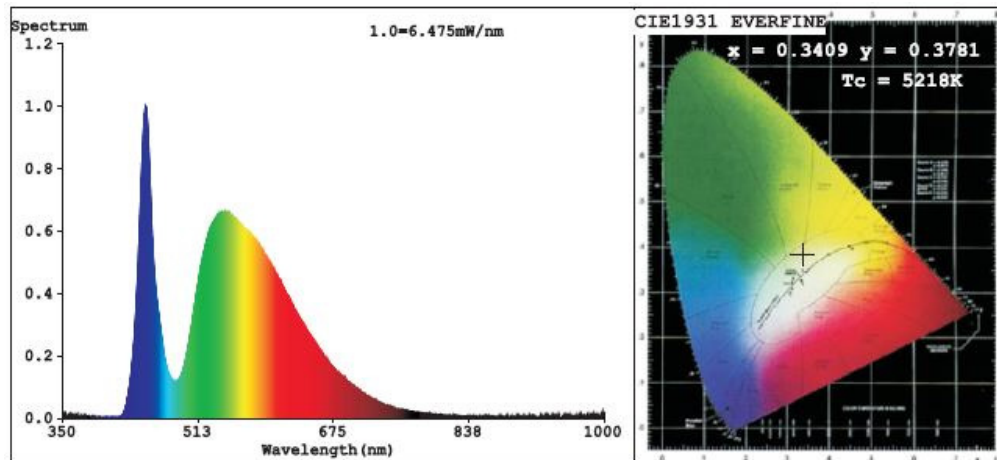Figure 1: Cadela Distribution

Figure 2: Illuminance at a Distance

Figure 3: Integrating Sphere Measurement

Photo Parameters:

Render Index: Ra = 71.2   Flux = 246.7 lm   Eff.: 22.20 lm/W   Fe = 732.8 mW

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

2. **Model: F15A-6500K**

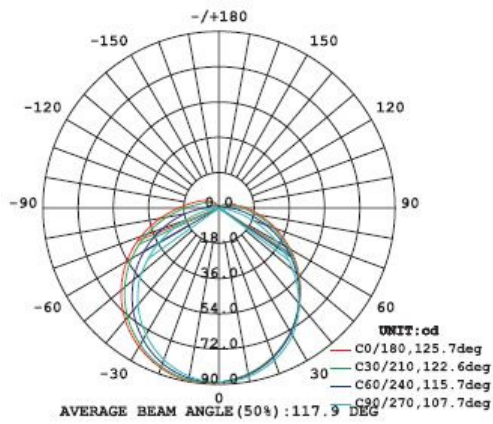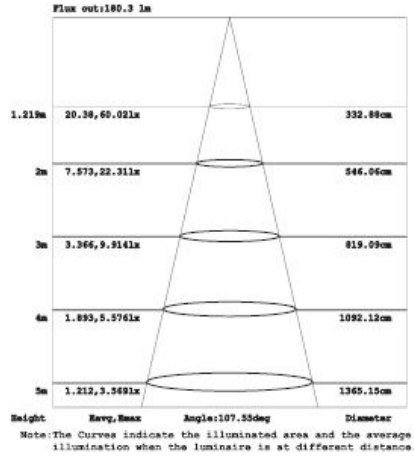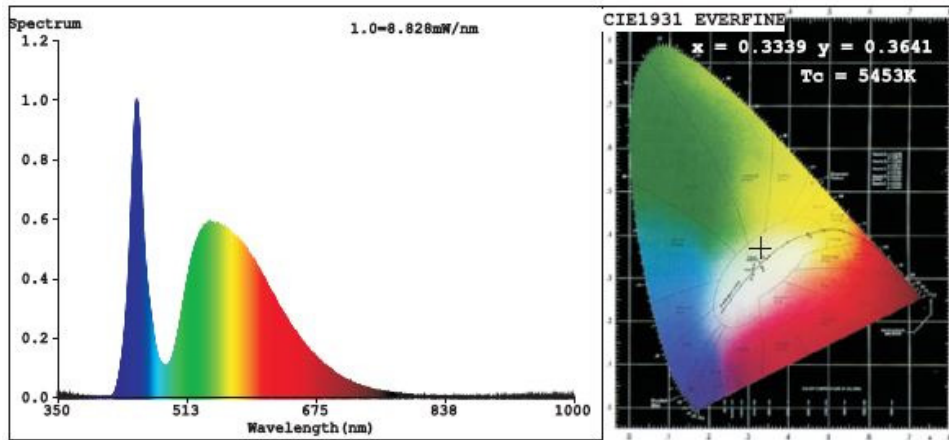Figure 4: Cadela Distribution   Figure 5: Illuminance at a Distance

Figure 6: Integrating Sphere Measurement

Photo Parameters:

Render Index: Ra = 71.7   Flux = 302.3 lm   Eff.: 27.99 lm/W   Fe = 909.8 mW

C. Connection Length

Power at one end: 10M

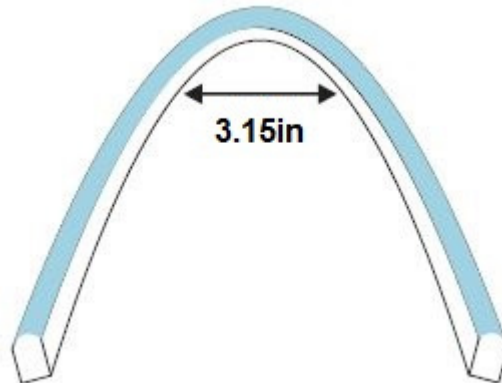

Power at both ends: 20M

Customized Length

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
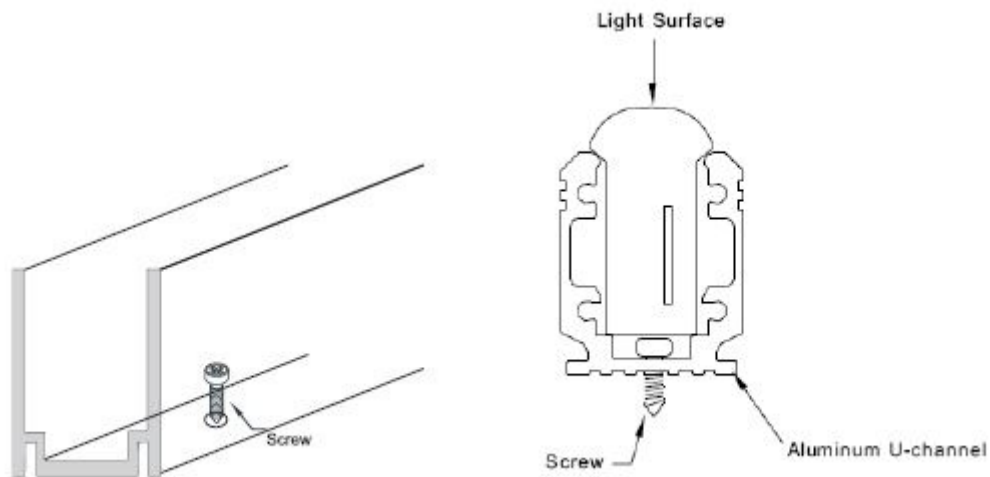
D. Bending Direction

The minimum bending diameter is 3.15in (8cm).

3.15in

E. Mounting

Every meter of aluminum channel has 2 screw holes. The installation usually requires installing aluminum channel as the first step, and then insert the LED neon product to the channel.

Light Surface

Screw

Screw

Aluminum U-channel

F. Connection
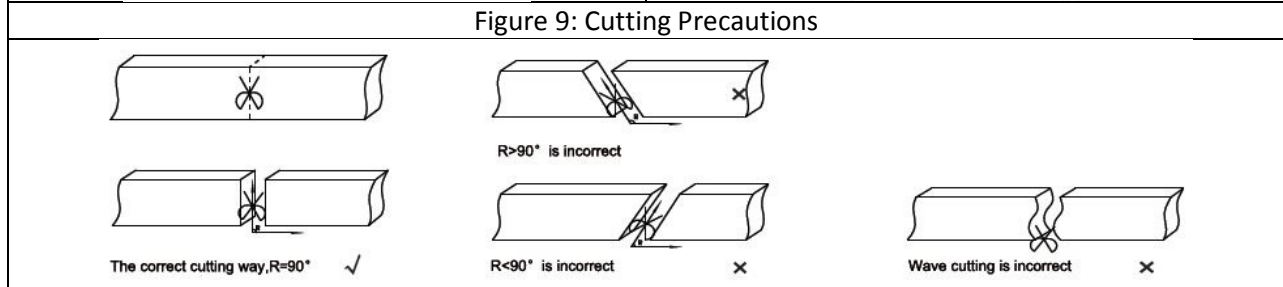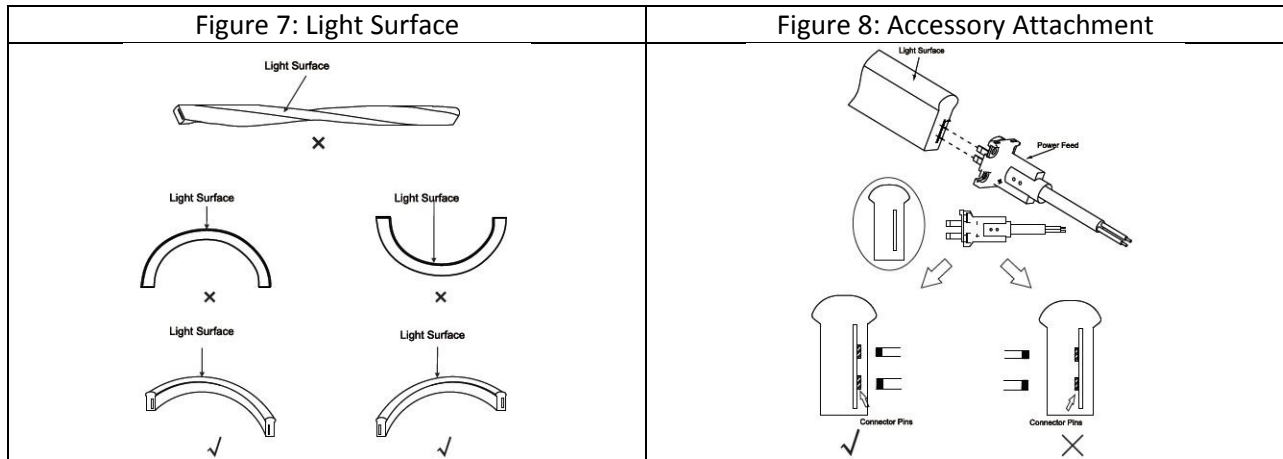
The use of LED neon requires a 24V constant voltage power supply.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

24V Power Supply

90V−256VAC

G. PRECAUTIONS

- Do not over extend the min. & max. bend radius.
- Although products do not generate a great amount of heat, it is recommended that you do not cover or conceal it
- Do not route LED flex neon through walls, doors, windows, or building structures.
- Do not roll out LED flex neon on rough surfaces and over sharp corners. This will scratch the PVC optic.
- Do not use the product if outer PVC jacket is damaged, loose connections, or if the wire is visible without insulation.
- Do not secure the product with staples, nails, or like means that might damage the insulation or PVC material.
- Do not install LED flex neon on/in places where it is subject to continuous flexing.
- Do not operate/run LED flex neon in temperatures exceeding 115F (45C).
- Do no operate LED flex neon over the specified voltage or LED life degradation will be greatly increased.
- Do not leave any part of the LED flex neon unsecured. Movement over time from weather can cause damage from continuous movement.
- Always place 100% silicone inside every connection before assembly.
- All LED neon IP68 rated connectors must be assembled properly to obtain rating.
- Do not reverse polarity when connecting from both ends. This will damage the internal PCB board. Always test connections with your multi-meter.
- Do not energize LED flex neon in reel package.
- LED flex neon can be cut only where marked. Look for "Dotted Line" or "Scissor Mark."
- Cutting outside the specified mark will damage the light.
- Do not cut while the LED flex neon is connected with power.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

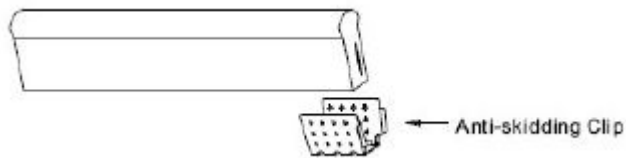| Figure 7: Light Surface	Figure 8: Accessory Attachment

Figure 9: Cutting Precautions

H. Accessory Assembling

1. Front Connector
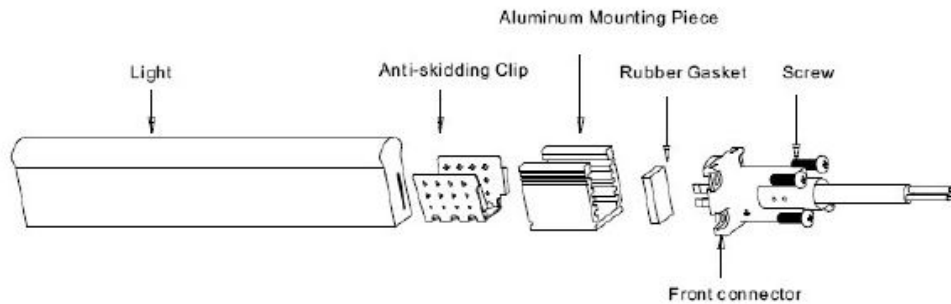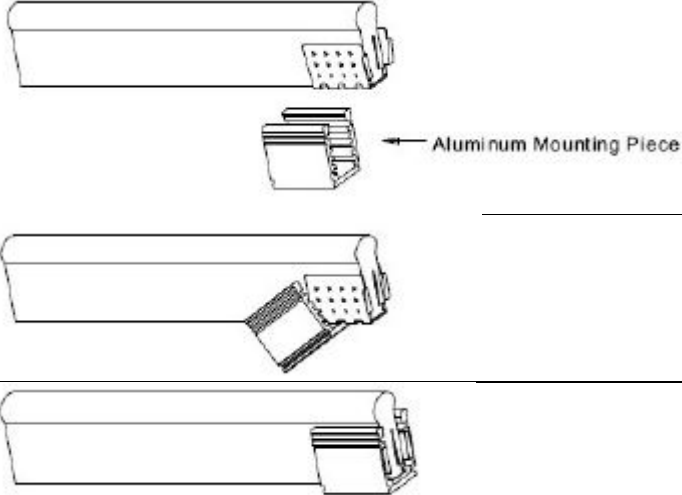
1. Place the anti-skidding clip on the very end of the tubing with the 2 tiny tabs that are pointing inwards still touching the end of the material and crimp in place.	

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
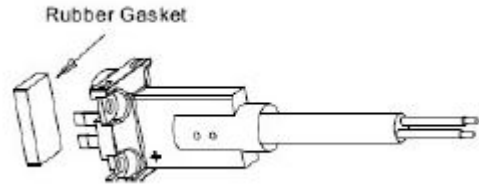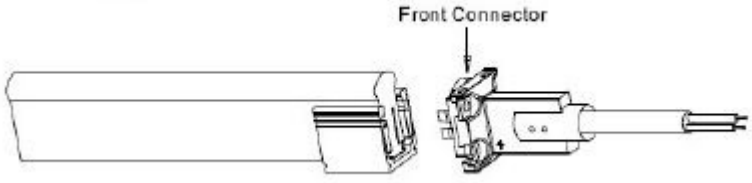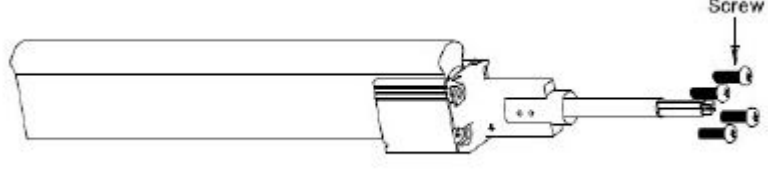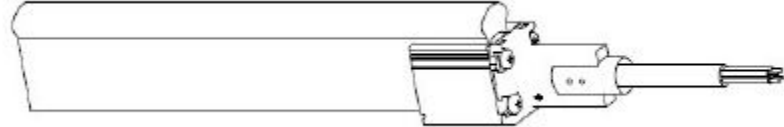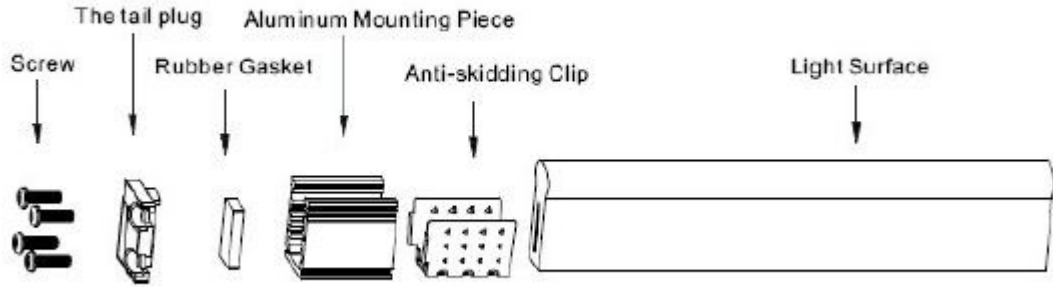
|	
2-4. Line up the aluminum mounting piece so the screw holes face the plug and slide on over the anti-skidding clip. Put 100% clear silicone on the end of the Neon Flex tube material covering the circuit board completely before proceeding to step 5. This is to ensure a waterproof seal. Failure to properly seal and assemble as instructed may void warranty.	Aluminum Mounting Piece
5. After putting silicone onto the end of the Neon Flex tube material, place the rubber gasket on the end of the tube.	Rubber Gasket
6-7. Insert your front connector so the connector pins are in the narrow edge of the connection point.	Front Connector
8. Screw the front connector to the aluminum mounting piece.	Screw
9. Check the connection to ensure it is tight and that there are no gaps between the Neon Flex tube and the front connector.	

2. **End Connector**

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

The tail plug   Aluminum Mounting Piece

Screw   Rubber Gasket   Anti-skidding Clip   Light Surface

	1. Place the anti-skidding clip on the very end of the tubing with the 2 tiny tabs that are pointing inwards still touching the end of the material and crimp in place.
Anti-skidding Clip →	
Aluminum Mounting Piece →	2-4. Line up the aluminum mounting piece so the screw holes face the plug and slide on over the anti-skidding clip. Put 100% clear silicone on the end of the Neon Flex tube material covering the circuit board completely before proceeding to step 5. This is to ensure a waterproof seal. Failure to properly seal and assemble as instructed may void warranty.
Rubber Gasket →	5. Place the rubber gasket on the end of the tube.
Rubber Gasket The tail plug →	6. Place the tail plug over the rubber gasket.
Screw →	7. Screw the tail plug to the aluminum mounting piece.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
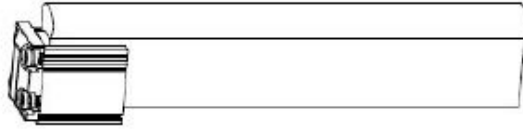
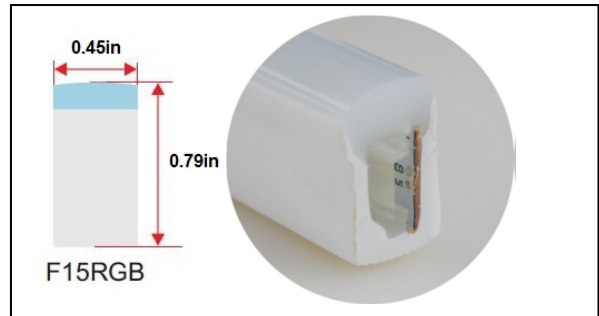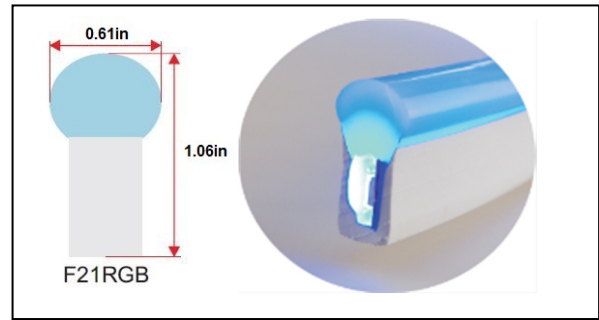|	8. Check the connection to ensure it is tight.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

RGB LED Flex Neon

A. Specification

1. Structure

Material: PVC body
Input Voltage: 24VDC
LED Qty/m: 60pcs
Protection: IP68
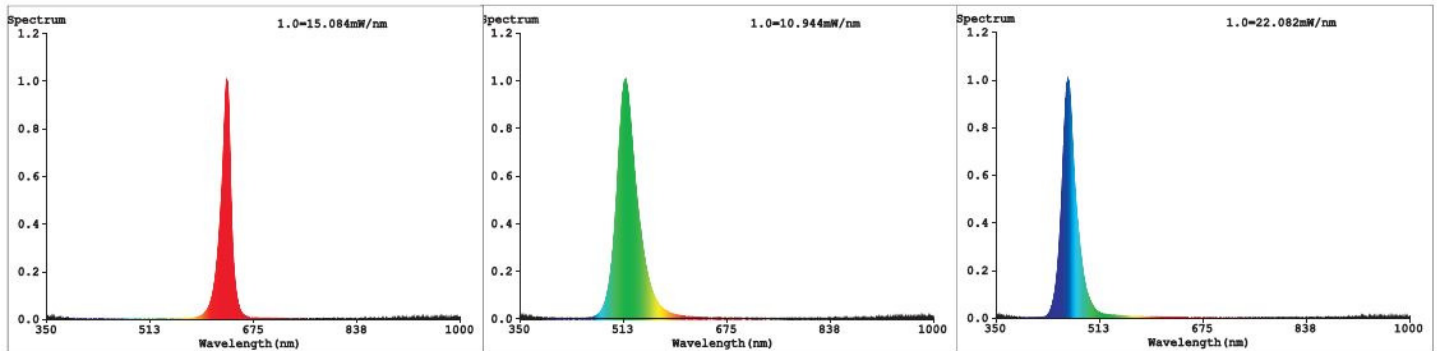Work Temperature: -22F – 113F (-30C to 45C)
IK Class: IK08

2. Model Configuration Table

Model NO.	LED Color	LEDs/Unit	Cutting Length	Power/m	Weight
F21RGB	RGB	10pcs SMD/5050	6.5in (16.67cm)	12W	1.17lbs/3.28ft 0.53kg/m
F15RGB	RGB	10pcs SMD/5050	6.5in (16.67cm)	12W	.8lb/3.28ft 0.38kg/m

B. Photometric Parameters

1. Model: F21RGB

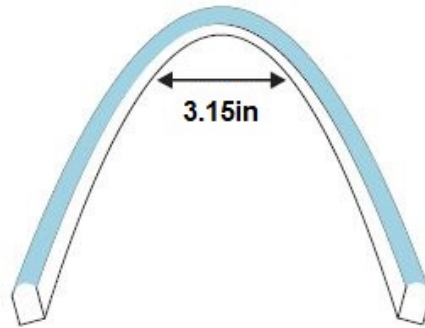**B-1.** Wave Length: Red 623.5nm, Green 522.8nm, Blue 469nm
B-2. Lumen Output: F21RGB – Red 18lm/m, Green 64lm/m, Blue 16lm/m
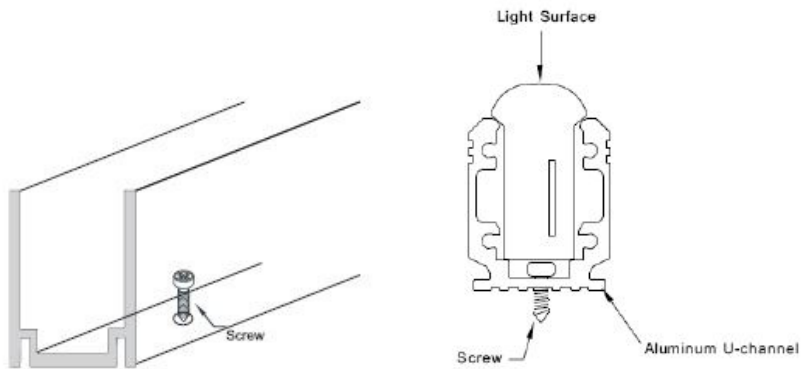**B-3.** Lumen Output: F15RGB – Red 20lm/m, Green 71lm/m, Blue 17lm/m

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

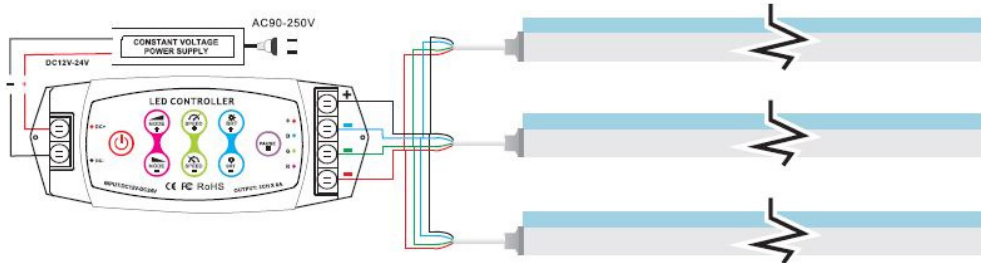## C. Bending Direction

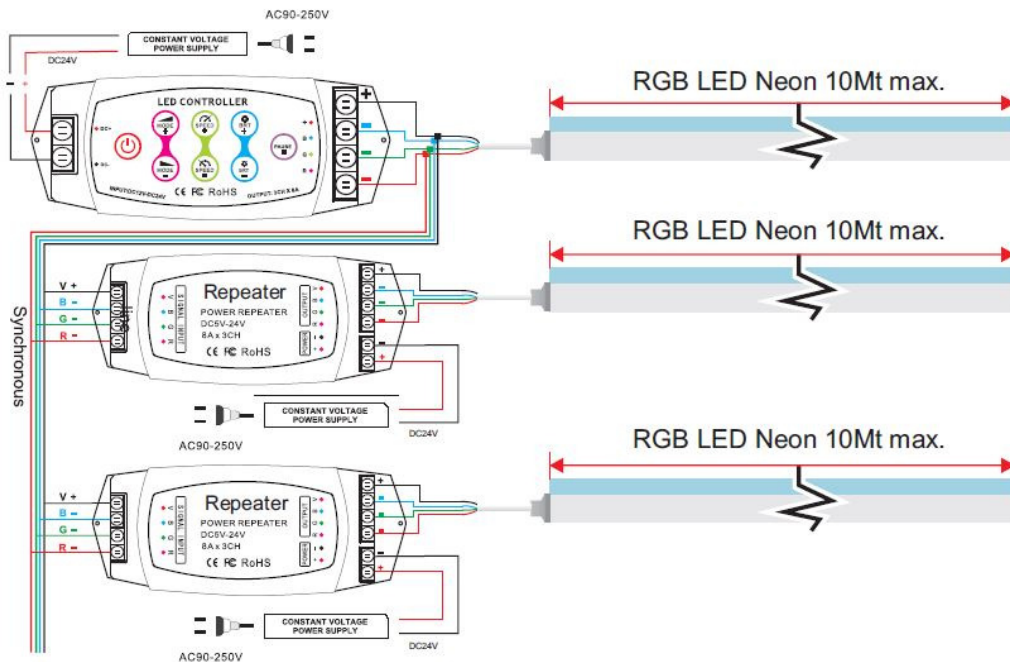The minimum bending diameter is 3.15in (8cm).

D. Mounting

E. Connection

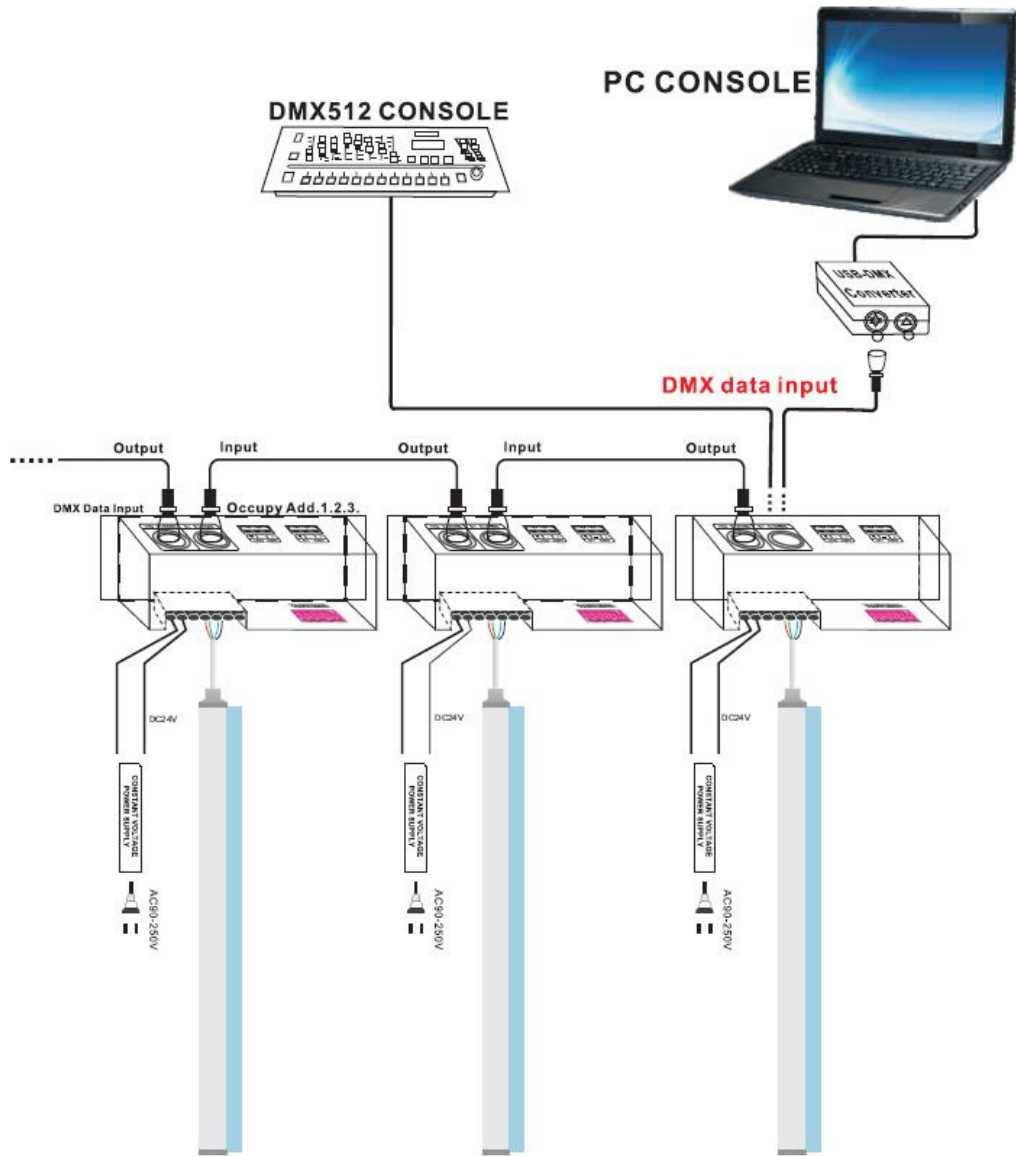1. **Connection with common RGB controller, 10 m max. for single length.**

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

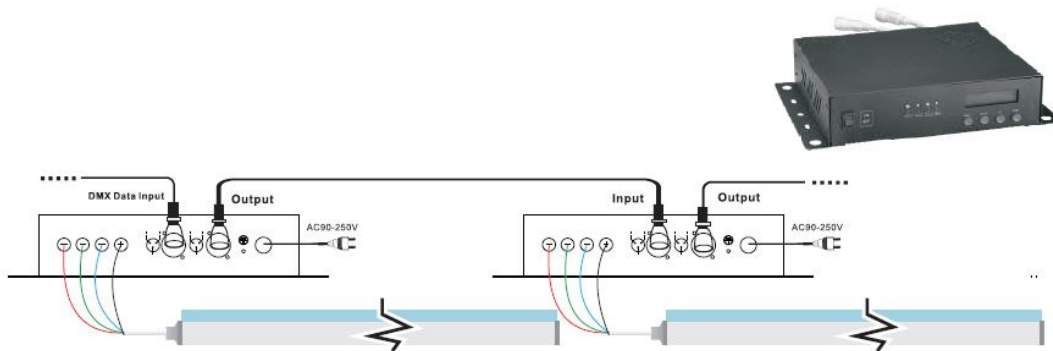## 2. Connection with common RGB controller, extended by using power repeater.

3. **Connection with DMX decoder and DMX controller.**

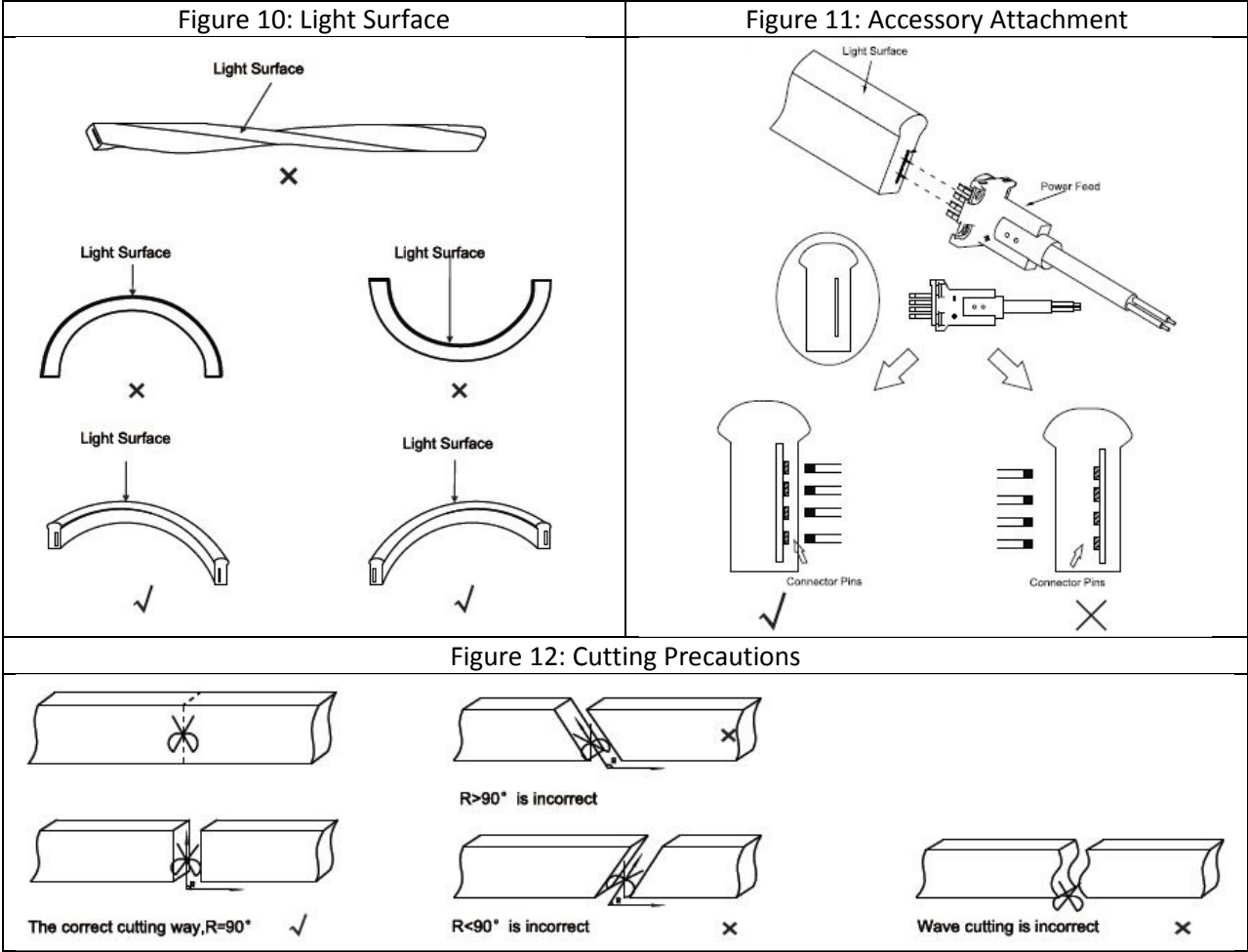4. **Connection with CTR-RGB-24V, this controller has 350W Meanwell power supply and DMX decoder built in.**

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

F. PRECAUTIONS

- Do not over extend the min. & max. bend radius
- Although products do not generate a great amount of heat, it is recommended that you do not cover or conceal it.
- Do not puncture, cut, shorten, or splice LED neon outside of the designated cutting marks.
- Do not route LED flex neon through walls, doors, windows, or building structures.
- Do not roll out LED flex neon on rough surfaces and over sharp corners. This will scratch the PVC optic.
- Do not secure the product with staples, nails, or like means that might damage the insulation of PVC material.
- Do not use the product if outer PVC jacket is damaged, loose connections, or if wire is visible without insulation.
- Do not install LED flex neon on/in places where it is subject to continuous flexing.
- Do not operate/run LED flex neon in temperatures exceeding 115F (45C).
- Do not operate LED flex neon over the specified voltage or LED life degradation will be greatly increased.
- Do not leave any part of the LED flex neon unsecured. Movement over time from weather can cause damage from continuous movement.
- All LED neon IP68 rated connectors must be assembled properly to obtain rating.
- Do not reverse polarity when connection from both ends. This will damage the internal PCB board. Always test connections with your multi-meter.
- Do not energize LED flex neon in the reel package.
- LED flex neon can be cut only where marked. Look for "Dotted Line" or "Scissor Mark." Cutting outside of the specified mark will damage the light.
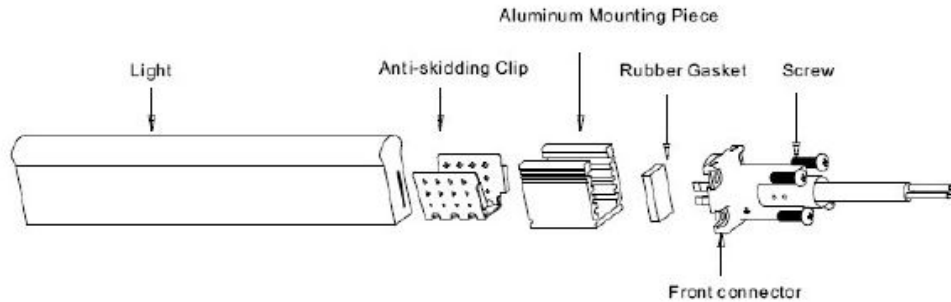- Do not cut while the LED flex neon is connected with power.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

Figure 10: Light Surface	Figure 11: Accessory Attachment

Figure 12: Cutting Precautions

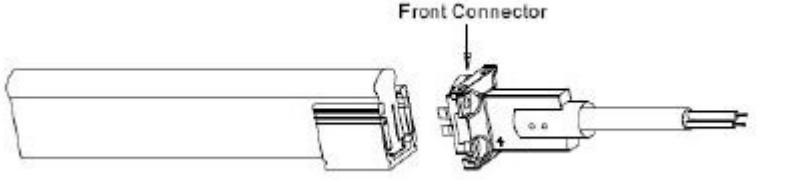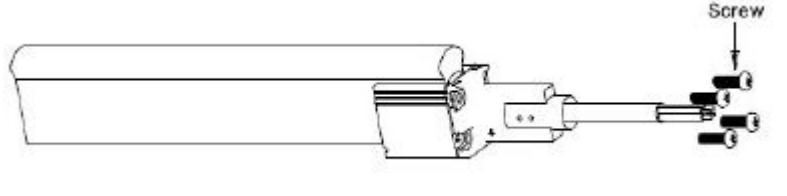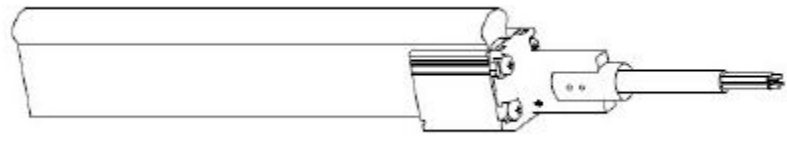Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

G. Accessory Assembling

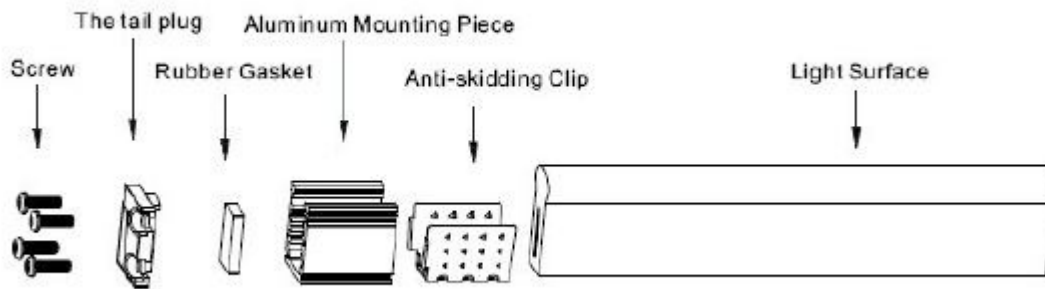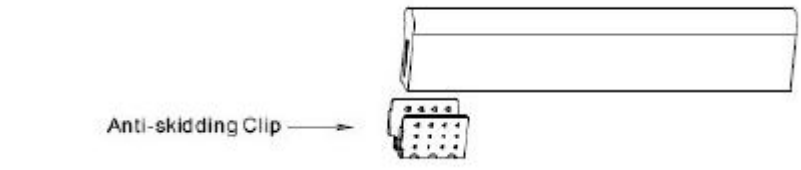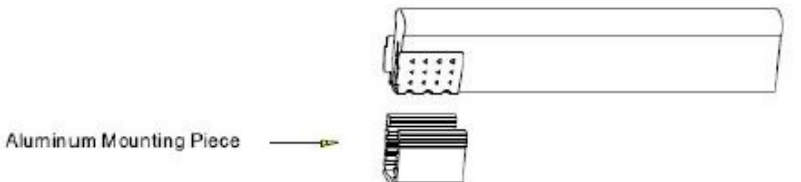## 1. Front Connector

1. Place the anti-skidding clip on the very end of the tubing with the 2 tiny tabs that are pointing inwards still touching the end of the material and crimp in place.	
2-4. Line up the aluminum mounting piece so the screw holes face the plug and slide on over the anti-skidding clip. Put 100% clear silicone on the end of the Neon Flex tube material covering the circuit board completely before proceeding to step 5. This is to ensure a waterproof seal. Failure to properly seal and assemble as instructed may void warranty.	
5. Place the rubber gasket on the end of the tube.	
6-7. Insert your front connector so the connector pins are in the narrow edge of the connection	

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
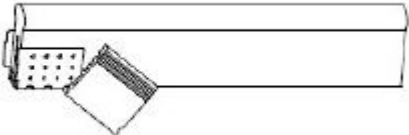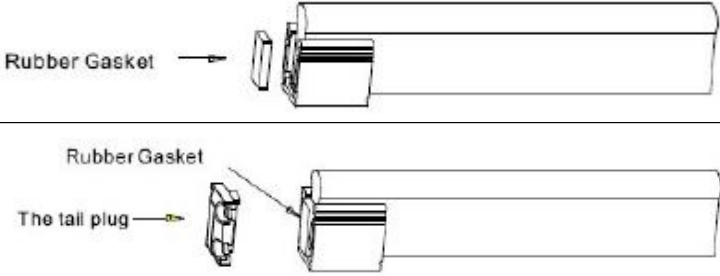
point.	Front Connector
8. Screw the front connector to the aluminum mounting piece.	Screw
9. Check the connection to ensure it is tight.	

2. **End Connector**

The tail plug   Aluminum Mounting Piece
Screw   Rubber Gasket   Anti-skidding Clip   Light Surface

Anti-skidding Clip ⟶		1. Place the anti-skidding clip on the very end of the tubing with the 2 tiny tabs that are pointing inwards still touching the end of the material and crimp in place.
Aluminum Mounting Piece ⟶		2-4. Line up the aluminum mounting piece so the screw holes face the plug and slide on over the anti-skidding clip. Put 100% clear silicone on the end of the Neon Flex

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

|	
	tube material covering the circuit board completely before proceeding to step 5. This is to ensure a waterproof seal. Failure to properly seal and assemble as instructed may void warranty.
	5. Place the rubber gasket on the end of the tube.
Rubber Gasket	6. Place the tail plug over the rubber gasket.
Rubber Gasket The tail plug	7. Screw the tail plug to the aluminum mounting piece.
Screw	8. Check the connection to ensure it is tight.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

DMX LED Neon Flex

A. Specification

1. Structure

Material: PVC Body
Input Voltage: 24VDC
LED Qty/m: 56pcs
Protection: IP68
Work Temperature: -22F – 113F (-30C to 45C)

IK Class: IK08
Pixel/m: 8 pixels
IC Model: WS2821
DMX address: Writeable
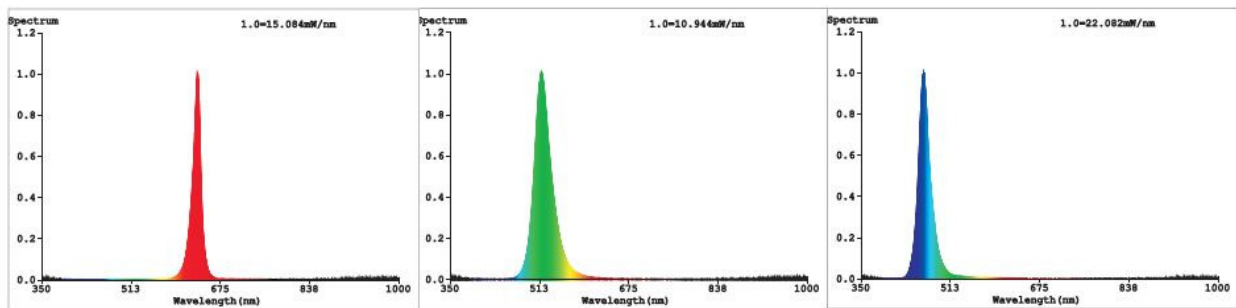Max Length: 7m (power at one end)
15m (power at both ends)
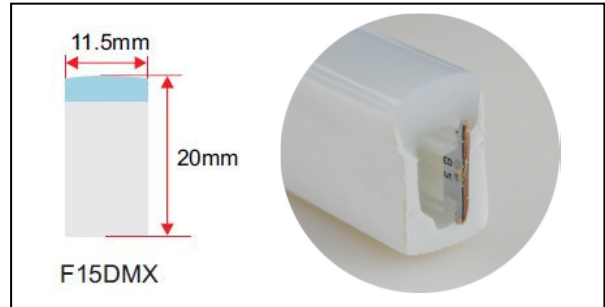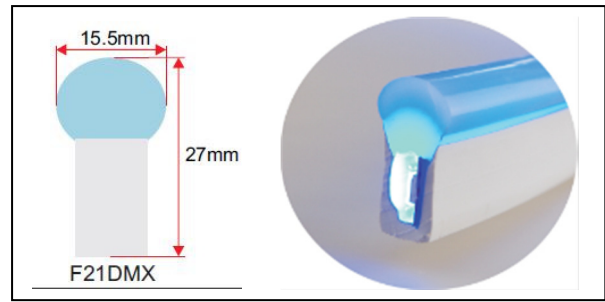
2. Model Configuration Table

Model No.	LED Color	LEDs/Unit	Cutting Length	Power/m	Weight
F21DMX	Pixel RGB	7pcs SMD/5050	5in (12.5cm)	12W	1lb/3.28ft 0.5kg/m
F15DMX	Pixel RGB	7pcs SMD/5050	5in (12.5cm)	12W	.8lb/3.28ft 0.38kg/m

B. Photometric Parameters

1. Model: F21DMX

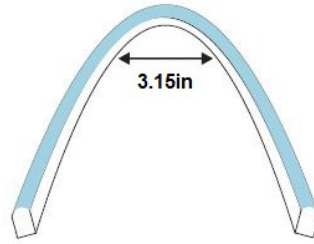B-1. Wave Length: Red 623.5nm, Green 522.8nm, Blue 469nm
B-2. Lumen Output: F21RGB: Red 17lm/m, Green 60lm/m, Blue 15lm/m
B-3. Lumen Output: F15RGB: Red 19lm/m, Green 66lm/m, Blue 16lm/m

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
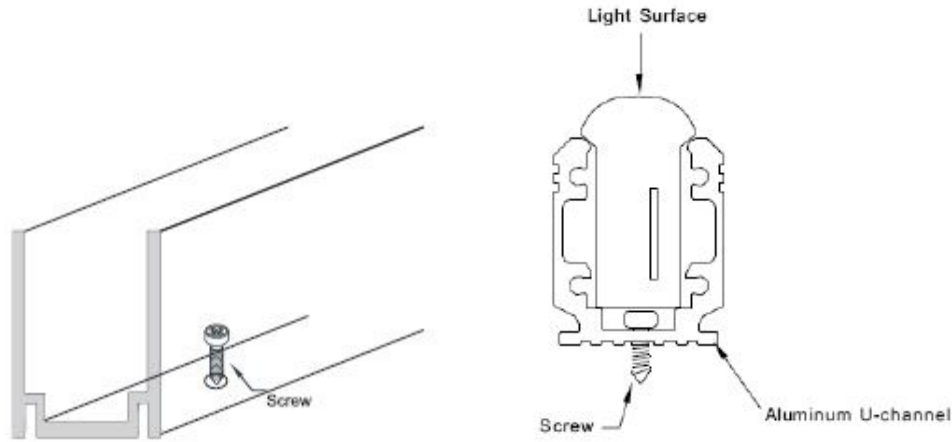
C. Bending Direction

The minimum bending diameter is 3.15in (8cm).

D. Mounting

Every meter of aluminum channel has 2 screw holes. The installation usually requires installing aluminum channel as the first step, and then inserting the LED neon product to the channel.
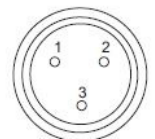

E. Connection

1. **Wire Illustration**

   i. **Bare Wire**

Black - Gnd
Red - 24Vdc+
Yellow - Data +
Green - Address

   ii. **With DMX Console**

DMX Console

PIN1 Gnd
PIN2 Data -
PIN3 Data +

Green - Address
Black - Gnd
Red - 24Vdc+

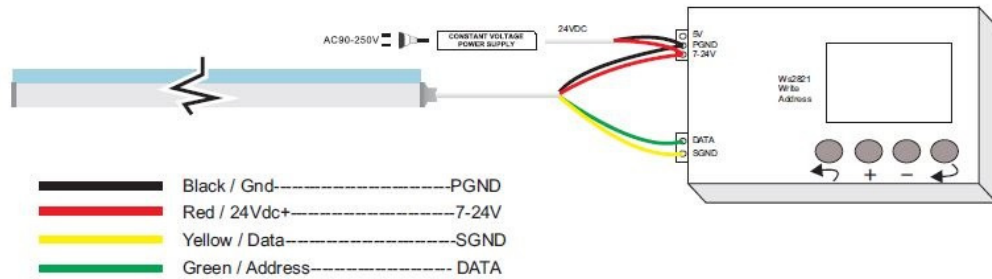Male DMX Console

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

2. **Write Address**

   The DMX LED neon address is present to 001 in factory. The address writer is needed to write new address when users cut new or use specially.
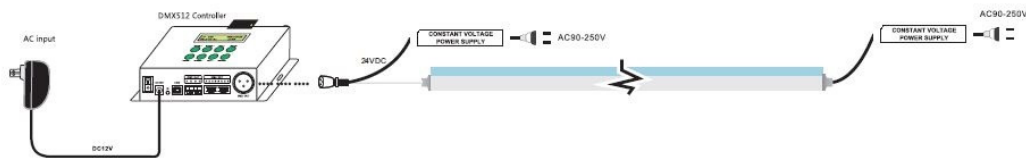

Black / Gnd------------------------PGND
Red / 24Vdc+--------------------7-24V
Yellow / Data--------------------SGND
Green / Address----------------- DATA

   After connection, press the ↵ button until the whole DMX LED neon shows white. This means the address is written successfully with start from 001.

3. **Connection with DMX Controller LT-800. This controller can only take 170 pixels.**
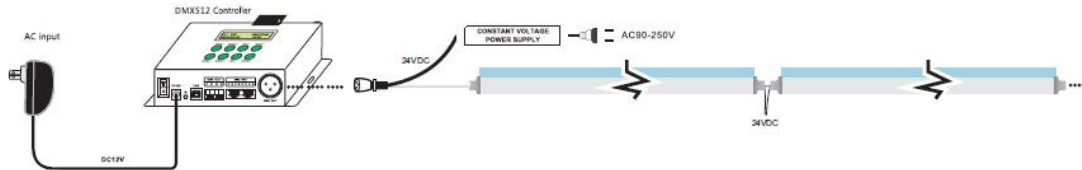
   Connection Length: 7m
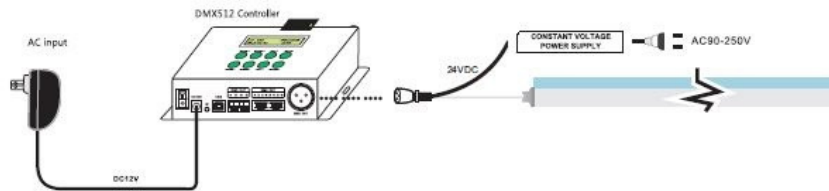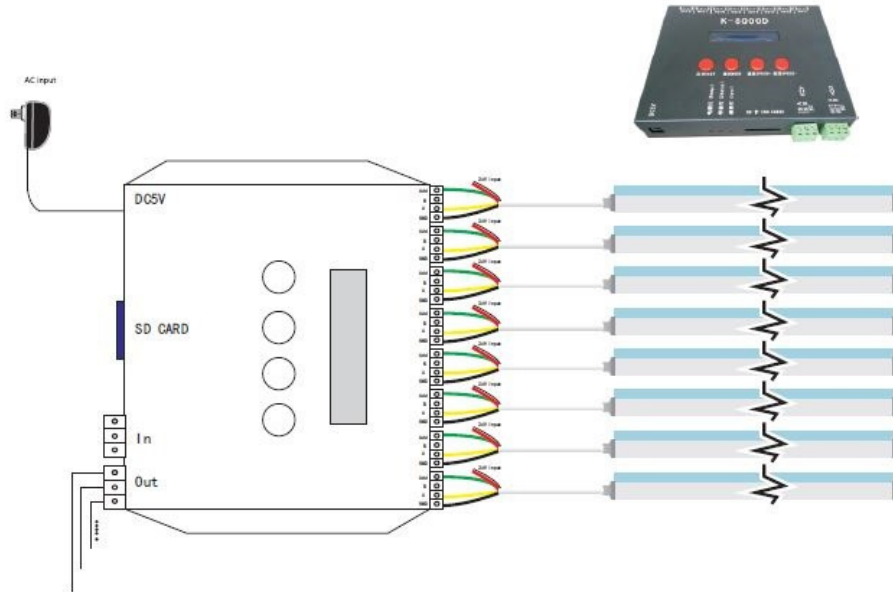

   Connection Length: 15m

   Connection Length: more than 15m

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

4. **Connection with specialized controller K-8000D. This controller has 8 outputs, each output can take 512 pixels. That means each output can take 60m of DMX LED neon. It has 32 kinds of built-in effects. This controller also has function of writing address.**
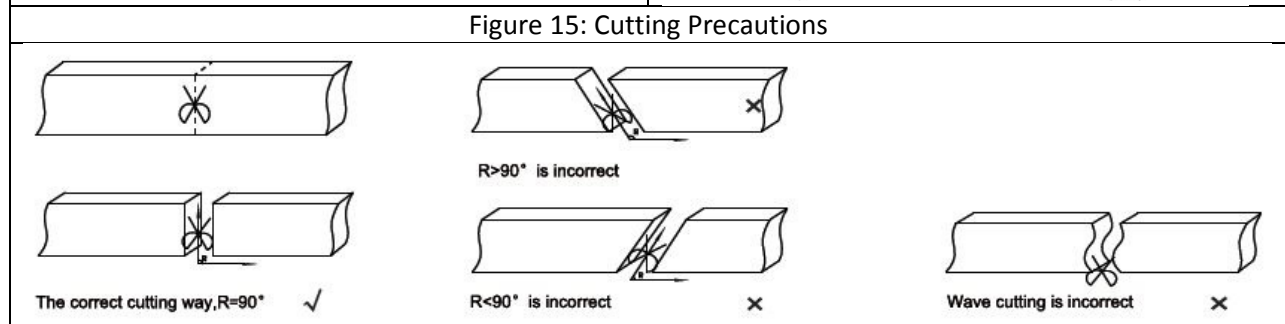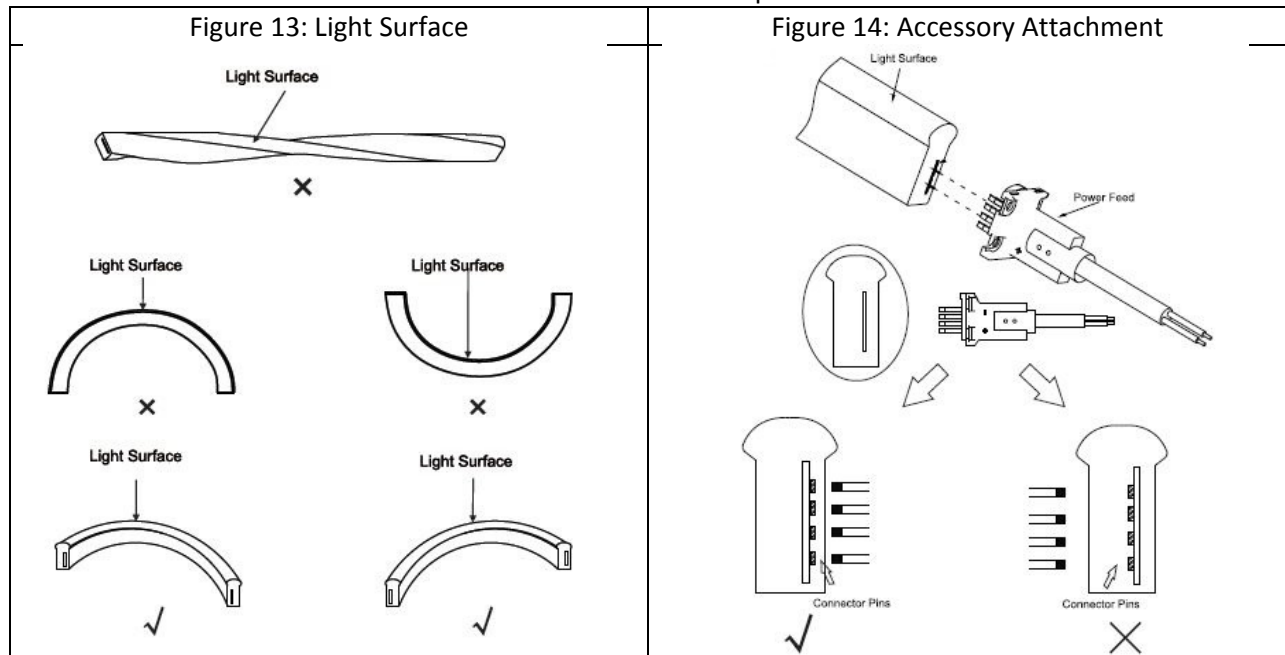

F. PRECAUTIONS

- Do not over extend the min. & max. bend radius.
- Although products do not generate a great amount of heat, it is recommended that you do not cover or conceal it.
- Do not puncture, cut, shorten, or splice LED neon outside of the designated cutting marks.
- Do not route LED flex neon through walls, doors, windows, or building structures.
- Do not roll out LED flex neon on rough surfaces and over sharp corners. This will scratch the PVC optic.
- Do not use the product if outer PVC jacket is damaged, loose connections, or if wire is visible without insulation.
- Do not secure the product with staples, nails, or like means that might damage the insulation or PVC material.
- Do not install LED flex neon on/in places where it is subject to continuous flexing.
- Do not operate/run LED flex neon in temperatures exceeding 115F (45C).
- Do not operate LED flex neon over the specified voltage or LED life degradation will be greatly increased.
- Do not leave any part of the LED flex neon unsecured. Movement over time from weather can cause damage from continuous movement.
- All LED neon IP68 rated connectors must be assembled properly to obtain rating.
- Do not reverse polarity when connecting from both ends. This will damage the internal PCB board. Always test connections with your multi-meter.
- Do not energize LED flex neon in the reel package.
- LED flex neon can be cut only where marked. Look for "Dotted Line" or "Scissor Mark." Cutting outside of the specified mark will damage the light.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
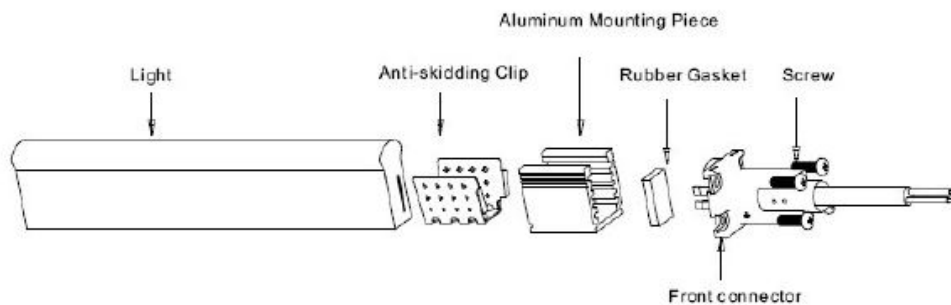
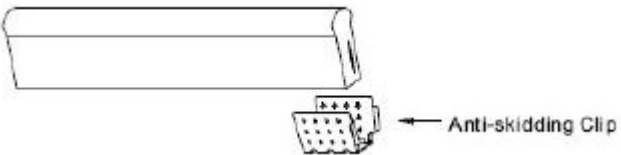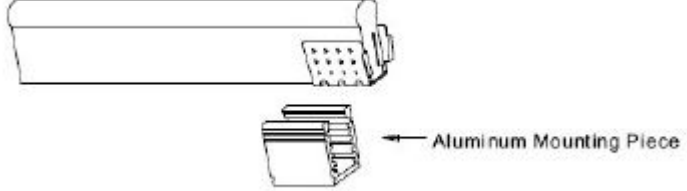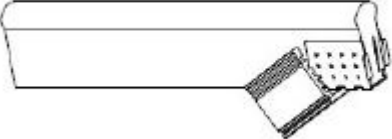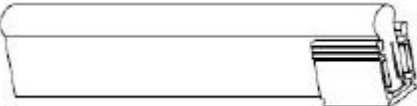- Do not cut while the LED flex neon is connected with power.

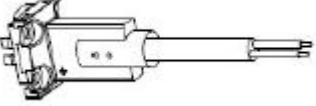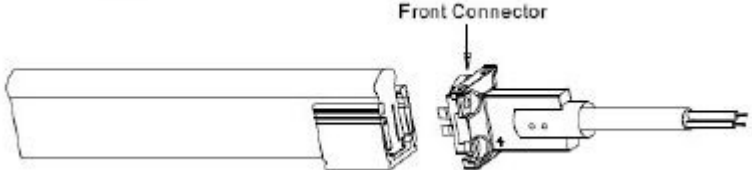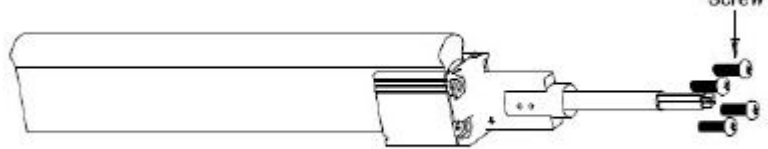| Figure 13: Light Surface	Figure 14: Accessory Attachment

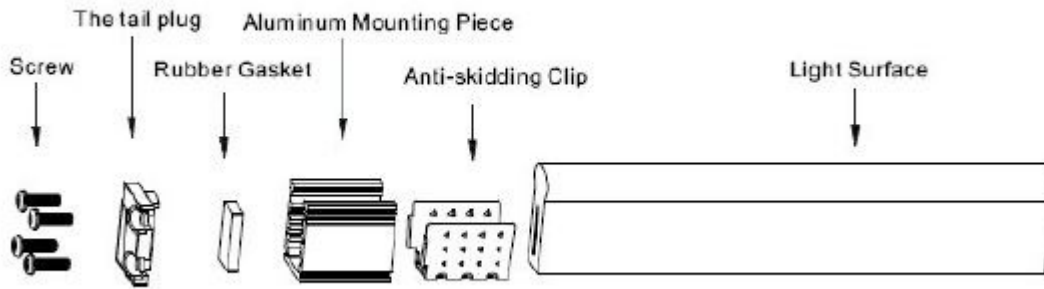| Figure 15: Cutting Precautions |
|---|
| |
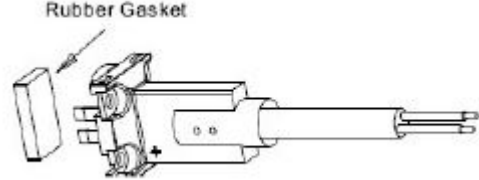
G. Accessory Assembling

1. Front Connector

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

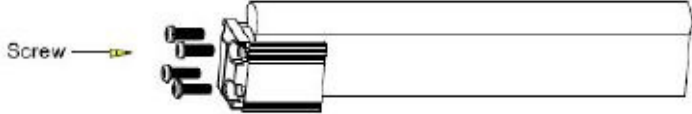|	
1. Place the anti-skidding clip on the very end of the tubing with the 2 tiny tabs that are pointing inwards still touching the end of the material and crimp in place.	Anti-skidding Clip
2-4. Line up the aluminum mounting piece so the screw holes face the plug and slide on over the anti-skidding clip. Put 100% clear silicone on the end of the Neon Flex tube material covering the circuit board completely before proceeding to step 5. This is to ensure a waterproof seal. Failure to properly seal and assemble as instructed may void warranty.	Aluminum Mounting Piece
5. Place the rubber gasket on the end of the tube.	Rubber Gasket
6-7. Insert your front connector so the connector pins are in the narrow edge of the connection point.	Front Connector
8. Screw the front connector to the aluminum mounting piece.	Screw
9. Check the connection to ensure it is tight.	

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

2. **End Connector**

	1. Place the anti-skidding clip on the very end of the tubing with the 2 tiny tabs that are pointing inwards still touching the end of the material and crimp in place.
	2-4. Line up the aluminum mounting piece so the screw holes face the plug and slide on over the anti-skidding clip. Put 100% clear silicone on the end of the Neon Flex tube material covering the circuit board completely before proceeding to step 5. This is to ensure a waterproof seal. Failure to properly seal and assemble as instructed may void warranty.
	5. Place the rubber gasket on the end of the tube.
	6. Place the tail plug over the rubber gasket.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.

	7. Screw the tail plug to the aluminum mounting piece.
Screw	8. Check the connection to ensure it is tight.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.