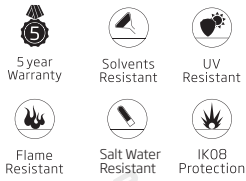
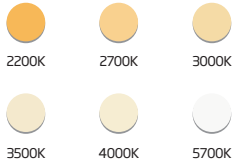


# Flexglo™ F23B Monochrome - White Light (Silicone)



Certification Mark		CE	
Test Standard/Directive	UL2108 Class 2	CE-EMC	IS 10322
Certificate Serial Number	20180801-E360029	SZEM1712012372LMV	R-41128376
Report Reference	E360029-20130322	SZEM171201237201	NO.20190425001



**Ambient Working Temperature**  
 $\leq 4.5\text{W/m}$   $-40 \sim 65^{\circ}\text{C}$  /  $-40 \sim 149^{\circ}\text{F}$   
 $9\text{W/m}$   $-40 \sim 60^{\circ}\text{C}$  /  $-40 \sim 140^{\circ}\text{F}$

**Ambient Installation Temperature**  
 $\geq -40^{\circ}\text{C}$  /  $-40^{\circ}\text{F}$

**Storage Temperature**  
 $-40 \sim 60^{\circ}\text{C}$  /  $-40 \sim 140^{\circ}\text{F}$

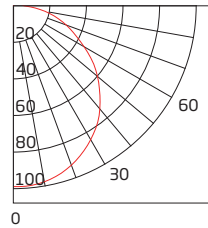
**Max. Mounting Surface Temperature**  
 $85^{\circ}\text{C}$  /  $185^{\circ}\text{F}$   
*specified in the non-working state of light.*

**Constant Voltage**  
 DC24V

## C-SFR-F23B-VB



C-SFR-F23B-VB-24CV-30K-WM-144-80-4.5W-83.3



UNIT: cd  
-C90/270

AVERAGE BEAM ANGLE (50%): 111.6°

**Min. Bending Diameter**  
100mm/3.94in

**Min. Cutting Length**  
83.3mm/3.28in  
12LEDs

**Vertical Bending**

**Bending-extreme**  
1174 times

**Tensile-instantaneous**  
>40kg.f

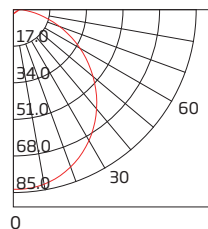
**Twist-extreme**  
6861 times

*Warning: Extreme Destructive Tests in laboratory only, and it's forbidden to operate in practice.*

## C-SFR-F23B-HB



C-FR-F23B-HB-24CV-30K-WM-144-80-4.5W-83.3



UNIT: cd  
-C90/270

AVERAGE BEAM ANGLE (50%): 105.9°

**Min. Bending Diameter**  
100mm/3.94in

**Min. Cutting Length**  
83.3mm/3.28in  
12LEDs

**Horizontal Bending**

**Bending-extreme**  
764 times

**Tensile-instantaneous**  
>40kg.f

**Twist-extreme**  
7878 times

*Warning: Extreme Destructive Tests in laboratory only, and it's forbidden to operate in practice.*

**Note:**

- The illuminated light length shall be an integral multiple of min. cutting length.
- The waterproof reliability of the lighting fixture depends on the IP rating of connector, and please make sure connector is properly assembled before installation. The highest IP rating we can achieve is IP67.

## Feature

Flexglo™ F23B Monochrome - White Light (Silicone), is a popular item for architectural and marine market with optional rated power of 4.5W/m and 9W/m. Its CRI value can reach 95Ra and maximum luminous flux is up to 440lm/m. Thanks to the excellent weatherproof and UV-resistant performance of silicone material, it features a wide ambient working temperature range of -40-55 °C, especially suitable for harsh environment application.

The IP67 Injection-moulded Connector is engineered for outdoor use, owing to its elegant appearance and strong adhesiveness acquired by the liquid silicone injection workmanship.

This product features a ultra long lifespan in outdoor application by leveraging other ClearTech™ such as the PinBoost™ technology enhancing physical reliability of light engine, the TwinFlex™ technology improving the conductivity and optimizing heat dissipation performance, the C-Mask™ technology making the light body self-cleaning and anti-UV and enabling consistent illumination.

## Electrical Parameter

Category	C-SFR-F23B-VB/HB	C-SFR-F23B-VB/HB
Voltage (V)	24	24
Current (mA/m)	375.0	187.5
Power (W/m)	9	4.5
Circuit Type	CV	CV
LED Type	2835	2835
LEDs Qty/m	144	144
LEDs Qty/unit	12	12
Unit/m	12	12
Min. Cutting Length (mm)	83.3	83.3
Min. Cutting Length (in)	3.28	3.28

## Item Code

C	SFR	F23B	VB	24CV	30K	WM	144	80	4.5W	83.3
Company	Material	Product Series	Bending Direction	Voltage & Circuit Type	CCT	Base & Lighting Surface	LEDs Qty/m	CRI	Power/m	Min. Cutting Length (mm)
Clear	SFR= Silicone Flex Ribbon	F23 B= Monochrome	VB= Vertical Bending HB= Horizontal Bending	DC24V & Constant Voltage	22K=2200K 27K=2700K 30K=3000K 35K=3500K 40K=4000K 57K=5700K  27K=2700K 30K=3000K 35K=3500K 40K=4000K  30K=3000K	WM= White & Milky	144	80  90  95	4.5W 9W  4.5W	83.3

# Optical Parameter

CRI80

Item Code	Finished Product						LED	
	CCT	CCT Tolerance	Color Tolerance	CRI	Lumen/m	Lumen/ft	Color Tolerance	CRI
C-SFR-F23B-VB-24CV-22K-WM-144-80-4.5W-83.3	2200K	2238±66K	<5SDCM	80	240lm	73 lm	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-27K-WM-144-80-4.5W-83.3	2700K	2725±85K	<5SDCM	80	260lm	79 lm	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-30K-WM-144-80-4.5W-83.3	3000K	3045±105K	<5SDCM	80	260lm	79 lm	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-35K-WM-144-80-4.5W-83.3	3500K	3465±245K	<5SDCM	80	260lm	79 lm	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-40K-WM-144-80-4.5W-83.3	4000K	3985±150K	<5SDCM	80	280lm	85 lm	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-57K-WM-144-80-4.5W-83.3	5700K	5669±305K	<5SDCM	80	280lm	85 lm	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-22K-WM-144-80-9W-83.3	2200K	2238±66K	<5SDCM	80	480lm	146lm	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-27K-WM-144-80-9W-83.3	2700K	2725±85K	<5SDCM	80	480lm	146 lm	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-30K-WM-144-80-9W-83.3	3000K	3045±105K	<5SDCM	80	480lm	146 lm	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-35K-WM-144-80-9W-83.3	3500K	3465±245K	<5SDCM	80	480lm	146 lm	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-40K-WM-144-80-9W-83.3	4000K	3985±150K	<5SDCM	80	480lm	146 lm	<2.3SDCM	82~87
C-SFR-F23B-VB-24CV-57K-WM-144-80-9W-83.3	5700K	5669±305K	<5SDCM	80	480lm	146 lm	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-22K-WM-144-80-4.5W-83.3	2200K	2238±66K	<5SDCM	80	200lm	61 lm	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-27K-WM-144-80-4.5W-83.3	2700K	2725±85K	<5SDCM	80	210lm	64lm	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-30K-WM-144-80-4.5W-83.3	3000K	3045±105K	<5SDCM	80	210lm	64 lm	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-35K-WM-144-80-4.5W-83.3	3500K	3465±245K	<5SDCM	80	210lm	64 lm	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-40K-WM-144-80-4.5W-83.3	4000K	3985±150K	<5SDCM	80	230lm	70 lm	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-57K-WM-144-80-4.5W-83.3	5700K	5669±305K	<5SDCM	80	230lm	70 lm	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-22K-WM-144-80-9W-83.3	2200K	2238±66K	<5SDCM	80	400lm	122lm	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-27K-WM-144-80-9W-83.3	2700K	2725±85K	<5SDCM	80	420lm	128 lm	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-30K-WM-144-80-9W-83.3	3000K	3045±105K	<5SDCM	80	420lm	128 lm	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-35K-WM-144-80-9W-83.3	3500K	3465±245K	<5SDCM	80	420lm	128 lm	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-40K-WM-144-80-9W-83.3	4000K	3985±150K	<5SDCM	80	460lm	140 lm	<2.3SDCM	82~87
C-SFR-F23B-HB-24CV-57K-WM-144-80-9W-83.3	5700K	5669±305K	<5SDCM	80	460lm	140 lm	<2.3SDCM	82~87

CRI90

Item Code	Finished Product							LED	
	CCT	CCT Tolerance	Color Tolerance	CRI	R9	Lumen/m	Lumen/ft	Color Tolerance	CRI
C-SFR-F23B-VB-24CV-27K-WM-144-90-4.5W-83.3	2700K	2725±85K	<5SDCM	90	35~80	180lm	55lm	<2.3SDCM	91~97
C-SFR-F23B-VB-24CV-30K-WM-144-90-4.5W-83.3	3000K	3045±105K	<5SDCM	90	35~80	180lm	55lm	<2.3SDCM	91~97
C-SFR-F23B-VB-24CV-35K-WM-144-90-4.5W-83.3	3500K	3465±245K	<5SDCM	90	35~80	180lm	55lm	<2.3SDCM	91~97
C-SFR-F23B-VB-24CV-40K-WM-144-90-4.5W-83.3	4000K	3985±150K	<5SDCM	90	35~80	180lm	55lm	<2.3SDCM	91~97
C-SFR-F23B-HB-24CV-27K-WM-144-90-4.5W-83.3	2700K	2725±85K	<5SDCM	90	35~80	170lm	52lm	<2.3SDCM	91~97
C-SFR-F23B-HB-24CV-30K-WM-144-90-4.5W-83.3	3000K	3045±105K	<5SDCM	90	35~80	170lm	52lm	<2.3SDCM	91~97
C-SFR-F23B-HB-24CV-35K-WM-144-90-4.5W-83.3	3500K	3465±245K	<5SDCM	90	35~80	170lm	52lm	<2.3SDCM	91~97
C-SFR-F23B-HB-24CV-40K-WM-144-90-4.5W-83.3	4000K	3985±150K	<5SDCM	90	35~80	170lm	52lm	<2.3SDCM	91~97

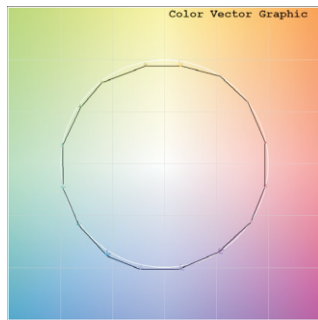
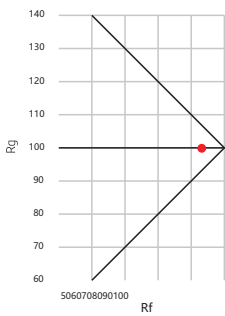
CRI 95

Item Code	Finished Product							LED	
	CCT	CCT Tolerance	Color Tolerance	CRI	R9	Lumen/m	Lumen/ft	Color Tolerance	CRI
C-SFR-F23B-VB-24CV-30K-WM-144-95-4.5W-83.3	3000K	3465±245K	<5SDCM	95	80~99	150lm	46lm	<2.3SDCM	96~99
C-SFR-F23B-HB-24CV-30K-WM-144-95-4.5W-83.3	3000K	3465±245K	<5SDCM	95	80~99	170lm	52lm	<2.3SDCM	96~99

**Note:**

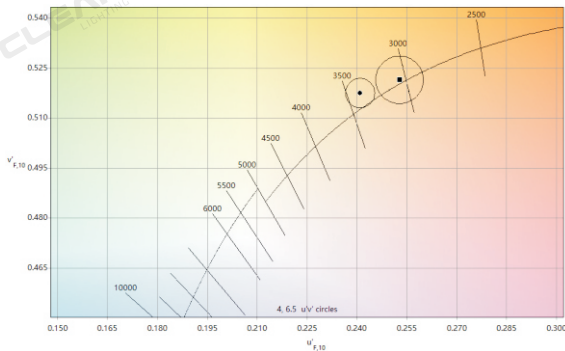
1. CCT tolerance and color tolerance both refer to ANSI C78.377 standard.
2. The color tolerance of finished products is kept <5SDCM from batch to batch and narrowed to <3SDCM at the same batch.

**TM-30**



IES TM-30-15 is a new system of several related measures and graphics that can be used together to effectively evaluate and communicate a light source's color rendering properties. The development of the method involved synthesizing multiple related research efforts and combining ideas into a single, cohesive system of objective information that can be used to aid decision-making processes, such as finding the preferred light source for a given application or evaluating the tradeoffs between efficacy and color rendering.

Measure	Abbreviation	Description
Fidelity Index	Rf	Analogous to CIE Ra (CRI). Characterizes the average color shift of the 99 CES to characterize the overall level of similarity between the test source and reference illuminant. Values range from 0 to 100.
Gamut Index	Rg	Compares the area enclosed by the average chromaticity coordinates in each of 16 hue bins to characterize the average saturation level of the test source compared to the reference illuminant. A neutral score is 100, with values greater than 100 indicating an increase in saturation and values less than 100 indicating a decrease in saturation. The range in values grows as fidelity decreases.


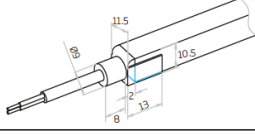


**Color Matching**

Color temperature value stated on all CLEAR's documents refers to finished products. LED's color temperature would be shifted by the light diffuser made of PVC or silicone material. CLEAR calibrates color temperature and color coordinate of tailor-made LEDs with proprietary color-matching algorithms to produce a precise color temperature and color coordinate close to black body locus for finished products. All LEDs would be strictly tested and tightly controlled to ensure finished products can meet ANSI standard.

**Max. Running Length**

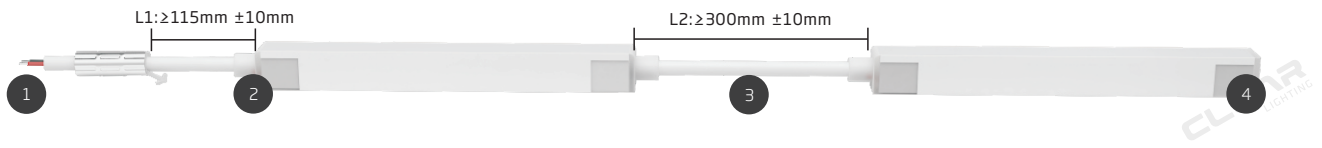
Input: DC24V

		
Type	Silicone Injection-moulded Connector	
IP Rating	IP67	
Item code	Single-end Feed	Double-end Feed
C-SFR-F23B-4.5W	15m	30m
C-SFR-F23B-9W	7.5m	15m

**Note:**

1. Above conclusion is based on voltage drop testing result of the light with 0.3m cable only.
2. The maximum running length is based on the light in static full loading status.
3. Above running length is only the light length excluding lengths of connectors. Please refer to the specific dimension of each connector.
4. The delivery length might be subject to the maximum packing length.

# Connector Type



1	2	3	4
---	---	---	---

**1** Male & Female Connector (Optional)




Male Connector

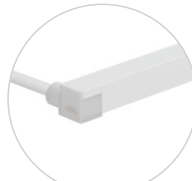


Female Connector


**2** Injection-moulded Front Connector




End



Side-L

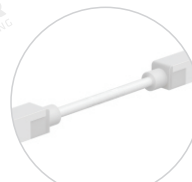


Side-R




Bottom

**3** Injection-moulded Middle Connector



Silicone Injection-moulded Jumper  
Maximum 4 jumpers in 10m light



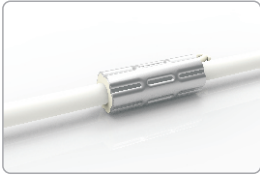
Silicone Injection-moulded T-feed  
Maximum 4 T-feeds in 10m light

**4** Injection-moulded End Cap



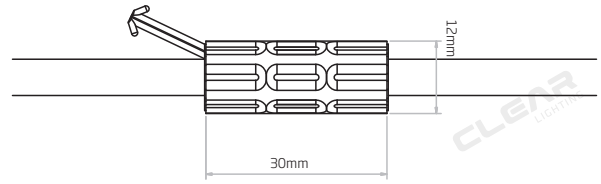
End cap

# Anti-wicking Ferrule



The anti-wicking ferrule is located at 115mm ( $\pm 10$ mm tolerance) from the connector on the cable.

For protection against water ingress from inside of cable wire and hence damage the light.



**Note:**

1. Unless otherwise stated, the tolerance is  $\pm 0.5$ mm.

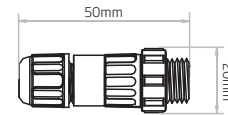
2. The removal of anti-wicking ferrule will void the warranty if any water ingress caused by it.

**F23B**   
22AWG\*2

# Male & Female Connector



For plug and play cable junction, IP67



**Note:**

Unless otherwise stated, the tolerance is  $\pm 2$ mm.

# Aluminum Profile

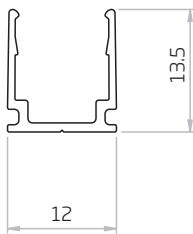


It uses high-quality 6063 aluminum with thin-wall, light-weight design to fit tightly the light body. It is deformation and rust resistant, and cost-effective.

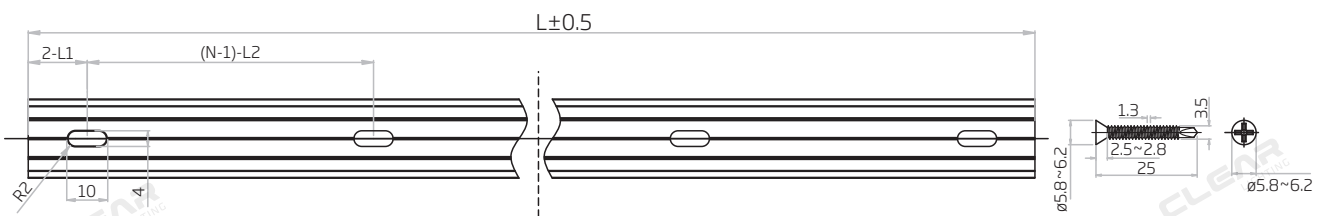
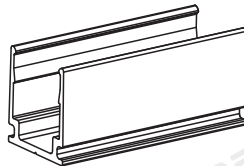
Please refer to the applicable installation ways.

Test Object	No.	Experiment Item	Standard
Metal Parts	1	Weather Resistance-Salt Spray	IEC 68-2-11
Mounting profile	2	Clamping force	CLEAR-defined

## Dimension: mm



Tolerance:  $\pm 0.3\text{mm}$

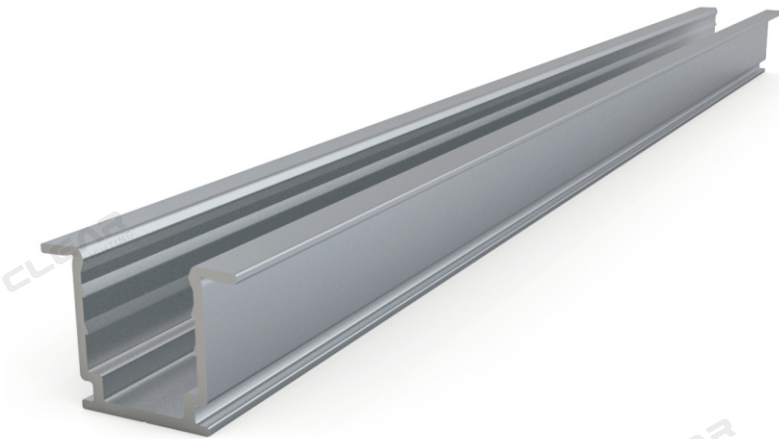


Note:

- 2-L1 refers to two of symmetric L1 in each piece of profile.
  - (N-1)-L2 refers to (N minus one) of symmetric L2 in each piece of profile.
- "N" hereby stands for its corresponding "Hole Number" in the below table

Item Code	Standard Length	L1	L2	Slotted Hole	Hole Number
F23-A/PL-35MM-AL	35mm/1.38in	17.5mm/0.69in	/	4*10mm/0.16*0.39in	1
F23-A/PL-500MM-AL	500mm/19.68in	50mm/1.97in	200mm/7.87in	4*10mm/0.16*0.39in	3
F23-A/PL-1000MM-AL	1000mm/39.37in	100mm/3.93in	200mm/7.87in	4*10mm/0.16*0.39in	5
F23-A/PL-2000MM-AL	2000mm/78.74in	100mm/3.93in	200mm/7.87in	4*10mm/0.16*0.39in	10

# Flange Aluminum Profile



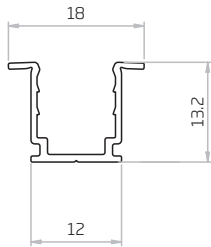
It uses high-quality 6063 aluminum with thin-wall, light-weight design to fit tightly the light body. It is deformation and rust resistant, and cost-effective. The "Flange" design is more suitable for recessed installation, better fits with the mounting groove and minimizes the operation tolerance during construction to some extent, like shielding the rough edges and the gaps of oversized groove.



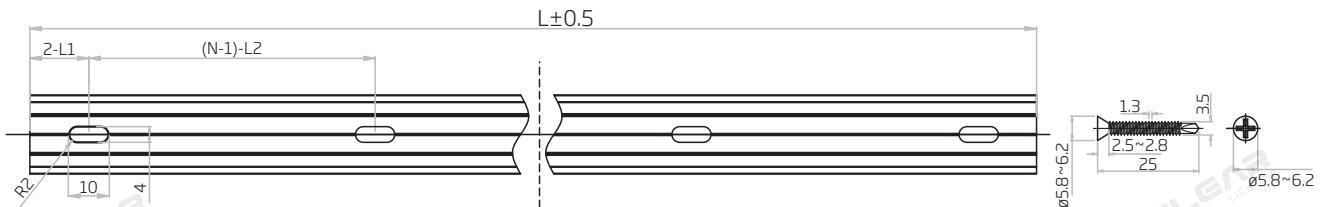
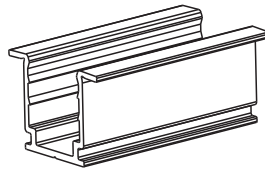
Please refer to the applicable installation ways.

Test Object	No.	Experiment Item	Standard
Metal Parts	1	Weather Resistance-Salt Spray	IEC 68-2-11
Mounting profile	2	Clamping force	CLEAR-defined

## Dimension: mm



Tolerance:  $\pm 0.3\text{mm}$



Note:

- 2-L1 refers to two of symmetric L1 in each piece of profile.
  - (N-1)-L2 refers to (N minus one) of symmetric L2 in each piece of profile.
- "N" hereby stands for its corresponding "Hole Number" in the below table

Item Code	Standard Length	L1	L2	Slotted Hole	Hole Number
F23-FA/PL-35MM-AL	35mm/1.38in	17.5mm/0.69in	/	4*10mm/0.16*0.39in	1
F23-FA/PL-500MM-AL	500mm/19.68in	50mm/1.97in	200mm/7.87in	4*10mm/0.16*0.39in	3
F23-FA/PL-1000MM-AL	1000mm/39.37in	100mm/3.93in	200mm/7.87in	4*10mm/0.16*0.39in	5
F23-FA/PL-2000MM-AL	2000mm/78.74in	100mm/3.93in	200mm/7.87in	4*10mm/0.16*0.39in	10



# Serrated Aluminum Profile

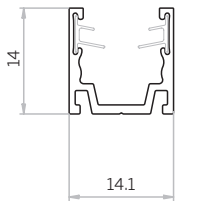


Specialized for the LED Flex Linear light, it was developed by combining the advantages of 6063 aluminum and elastic serrated tape. The inside elastic serrated tape as the grabbing force to keep continuous strong clamping force on the light body and protect the light from the damage caused by the large friction in the process of installation and dismantlement. It can stand max. 50 times of the light weight under -20~70°C and is easy to install and dismantle.

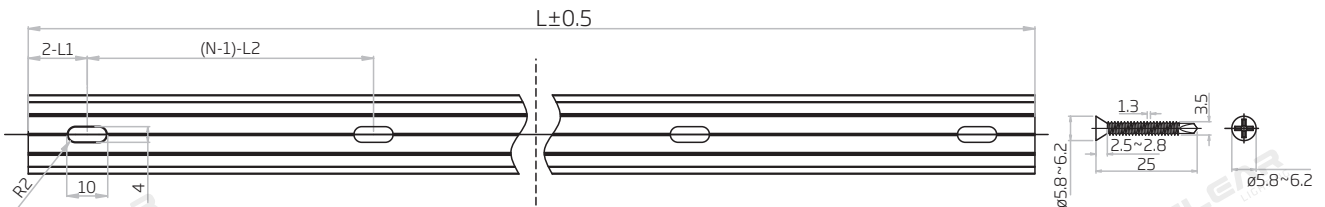
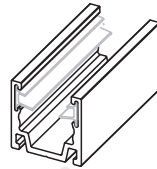
Please refer to the applicable installation ways.

Test Object	No.	Experiment Item	Standard
Metal Parts	1	Weather Resistance-Salt Spray	IEC 68-2-11
Mounting profile	2	Clamping force	CLEAR-defined

## Dimension: mm



Tolerance:  $\pm 0.3\text{mm}$

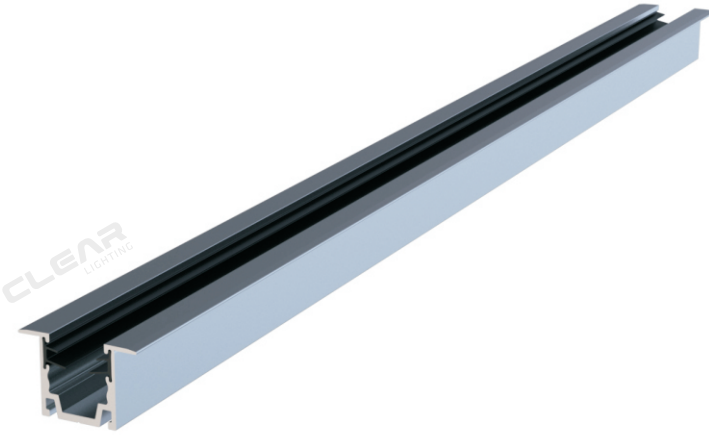


Note:

1. 2-L1 refers to two of symmetric L1 in each piece of profile.
  2. (N-1)-L2 refers to (N minus one) of symmetric L2 in each piece of profile.
- "N" hereby stands for its corresponding "Hole Number" in the below table

Item Code	Standard Length	L1	L2	Slotted Hole	Hole Number
F23-SA/PL-20MM-AL	20mm/0.787in	10mm/0.39in	/	4*10mm/0.16*0.39in	1
F23-SA/PL-500MM-AL	500mm/19.68in	50mm/1.97in	200mm/7.87in	4*10mm/0.16*0.39in	3
F23-SA/PL-1000MM-AL	1000mm/39.37in	100mm/3.93in	200mm/7.87in	4*10mm/0.16*0.39in	5
F23-SA/PL-2000MM-AL	2000mm/78.74in	100mm/3.93in	200mm/7.87in	4*10mm/0.16*0.39in	10

# Flange Serrated Aluminum Profile



Specialized for the LED Flex Linear light, it was developed by combining the advantages of 6063 aluminum and elastic serrated tape. The inside elastic serrated tape as the grabbing force to keep continuous strong clamping force on the light body and protect the light from the damage caused by the large friction in the process of installation and dismantlement.

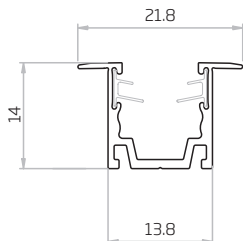
The "Flange" design is more suitable for recessed installation, better fits with the mounting groove and minimizes the operation tolerance during construction to some extent, like shielding the rough edges and the gaps of oversized groove.



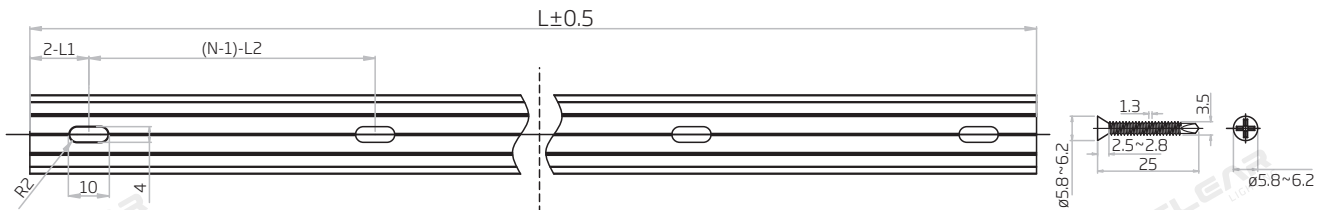
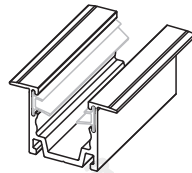
Please refer to the applicable installation ways.

Test Object	No.	Experiment Item	Standard
Metal Parts	1	Weather Resistance-Salt Spray	IEC 68-2-11
Mounting profile	2	Clamping force	CLEAR-defined

## Dimension: mm



Tolerance:  $\pm 0.3\text{mm}$

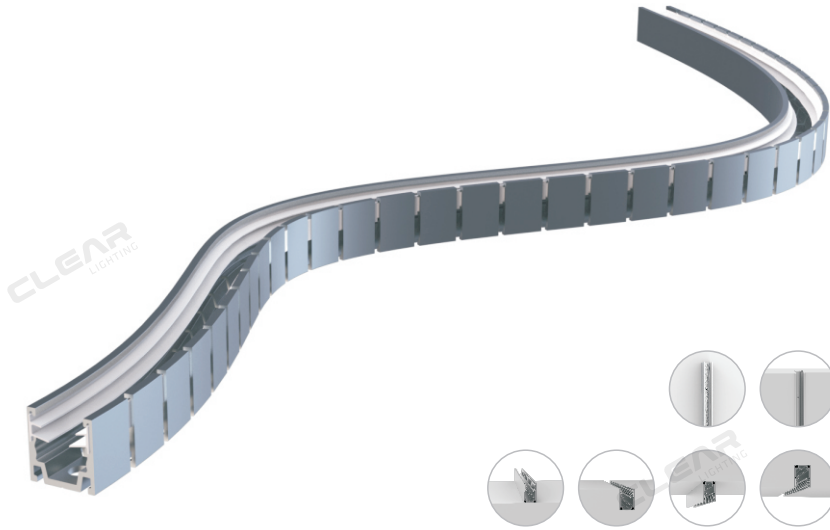


Note:

1. 2-L1 refers to two of symmetric L1 in each piece of profile.
  2. (N-1)-L2 refers to (N minus one) of symmetric L2 in each piece of profile.
- "N" hereby stands for its corresponding "Hole Number" in the below table

Item Code	Standard Length	L1	L2	Slotted Hole	Hole Number
F23-FSA/PL-20MM-AL	20mm/0.787in	10mm/0.39in	/	4*10mm/0.16*0.39in	1
F23-FSA/PL-500MM-AL	500mm/19.68in	50mm/1.97in	200mm/7.87in	4*10mm/0.16*0.39in	3
F23-FSA/PL-1000MM-AL	1000mm/39.37in	100mm/3.93in	200mm/7.87in	4*10mm/0.16*0.39in	5
F23-FSA/PL-2000MM-AL	2000mm/78.74in	100mm/3.93in	200mm/7.87in	4*10mm/0.16*0.39in	10

# F23 Bendable Serrated Aluminum Profile

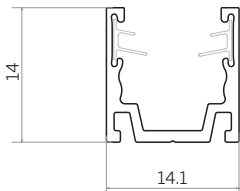


It is an expanded design of the serrated aluminum profile, and caters for the continuously streamlined aesthetics of curve shape. The secondary precision cutting process, not only maintains the advantage of clamping force, but also enables the two-way horizontal bending directions with super shape memory.

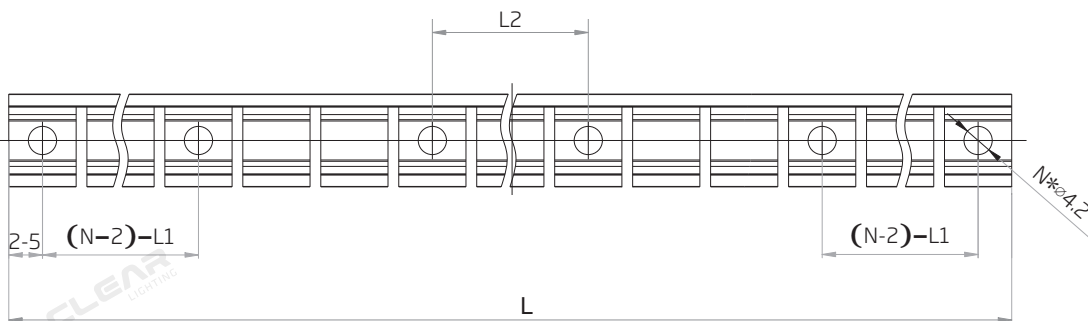
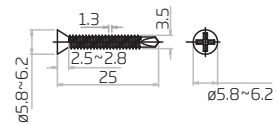
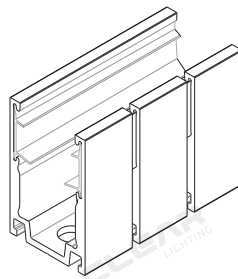
Please refer to the applicable installation ways.

Test Object	No.	Experiment Item	Standard
Metal Parts	1	Weather Resistance-Salt Spray	IEC 68-2-11
Mounting profile	2	Clamping force	CLEAR-defined

## Dimension: mm



Tolerance:  $\pm 0.3\text{mm}$



Note:

- 2.5 refers to two of symmetric 5mm in each piece of profile.
  - (N-2)-L1 refers to (N minus two) of symmetric L1 in each piece of profile.
- "N" hereby stands for its corresponding "Hole Number" in the below table

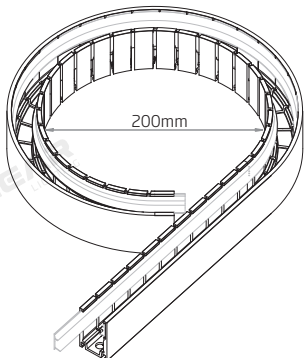
Item Code	Standard Length	L1	L2	Screw Hole	Hole Number
F23-BSA/PL-500MM-AL	500mm/19.68in	110.3mm/4.34in	48.9mm/1.92in	$\phi 4.2\text{mm}/0.17\text{in}$	6
F23-BSA/PL-1000MM-AL	1000mm/39.37in	116.5mm/4.59in	98.8mm/3.89in	$\phi 4.2\text{mm}/0.17\text{in}$	10

# Installation Instructions

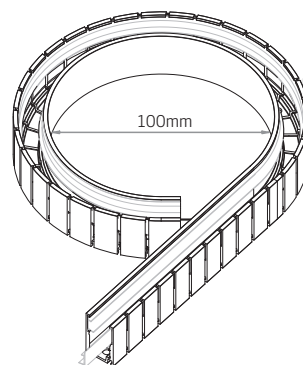
Friendly Reminder: please read instructions carefully before operation.

## Bending Diameter

Min. Bending Diameter (Toothed Side inwards)

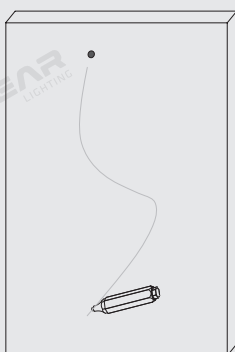


Min. Bending Diameter (Toothed Side outwards)



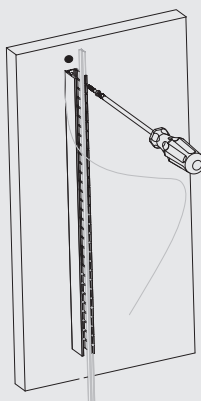
## Installation

### Step 1



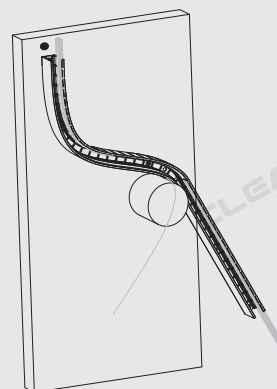
Mark the required shape on the mounting surface or print the sketch in the scale of 1:1 if complicated.

### Step 2



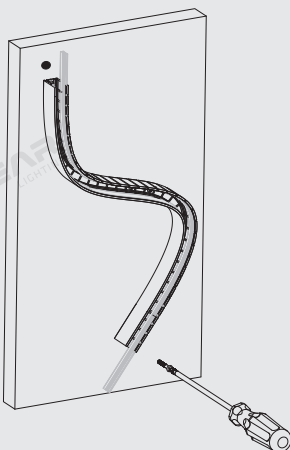
Get the front connector outside of profile and keep at least 10mm more apart. Fix the screw starting from the power input end.

### Step 3



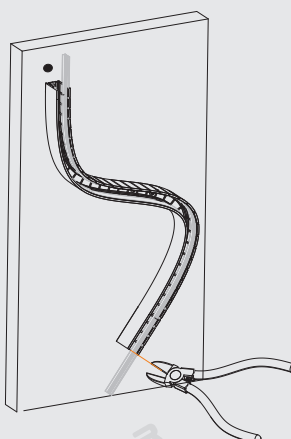
Use cylinder or disc-like object you have to assist with shaping.

### Step 4



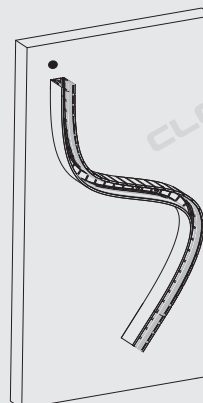
Fix the rest in sequence along with the marks.

### Step 5



Adjust the serrate silicone tape and remove the redundant lengths at both ends.

### Step 6



Finish and fix the light in.