

# artist of light

## Specification

For LED Neon Flex Ribbon

C-SFR-F22D

C-SFR-F22D-VB



**CLEAR**  
LIGHTING

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# Introduction

C-SFR-F22D is a new member of the Artist of Light series coupled with intelligent LEDs for dynamic white, which enable you to replace a variety of lighting sources and implement a lighting design consistently and efficiently that responds to your undefined and specific needs.

C-SFR-F22D is UL/cUL, CE, TUV and RoHS compliant. Moreover, it has passed rigorous environmental resistance, optical, mechanical and electrical tests in our lab under the support of advanced experimental equipments and technology to ensure it meets the requirements of harsh environments. Also it has passed relevant tests of third party inspection authority.

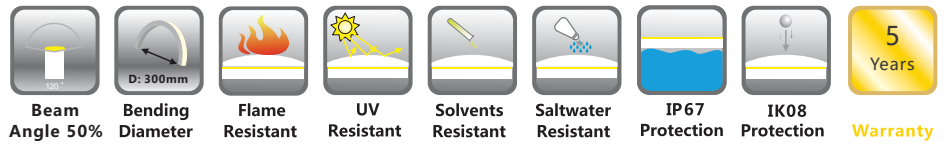
Fully encapsulated in the flexible silicone chamber by utilizing consummate extrusion technology, assembled with multiple patented connectors to achieve IP67 protection; easy for installation and applicable for various circumstances.

C-SFR-F22D can vary color temperature from 2200K to 5700K with smooth illumination and small bend diameter in both horizontal and vertical bending direction.

#### Applications:

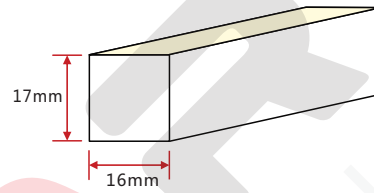
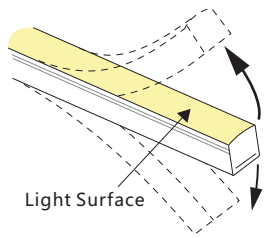
1. Outdoor or Indoor Contour/Border Lighting
2. Architectural Outline/Decorative Lighting
3. Cove/Accent Lighting
4. Facade/Terrace Floor Lighting
5. Display Lighting

# 1. Specifications & Parameters



## 1.1 Dimensions of Light

C-SFR-F22D-VB



Note: Unless otherwise stated, the tolerance of the light is  $\pm 0.3\text{mm}$ .

## 1.2 Technical Parameters

Technical Parameters

Article No.	C-SFR-F22D-24CV
Color	W/WW
Working Voltage	DC24V
Rated Power/m	12W
LED Qty/m	144LEDs
LED Distance	13.89mm
Min. Cutting Unit	12LEDs (1 unit)
Min. Cutting Length	83.3mm(1 unit)
Continuous Length	15m
Weight/m	365g
Storage Temperature	-40~60°C
Ambient Working Temperature	-40~55°C
Ambient Installation Temperature	-40~50°C
IP Rating	IP67

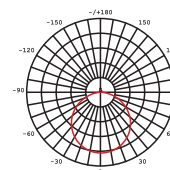


## 1.3 Optical Parameters

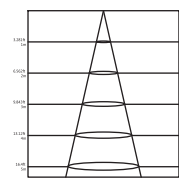
Photometric Data

Article No.	C-SFR-F22D-24CV		
LED Type	SMD		
Beam Angle 50%	120°		
Color	CCT	Lumen/m	Power/m
2200(WW)	2238±102K	>220lm	
5700(W)	5669±355K	>270lm	
W+WW	3465±245K	>490lm	12w

Candle power distribution



Illuminance Characteristics



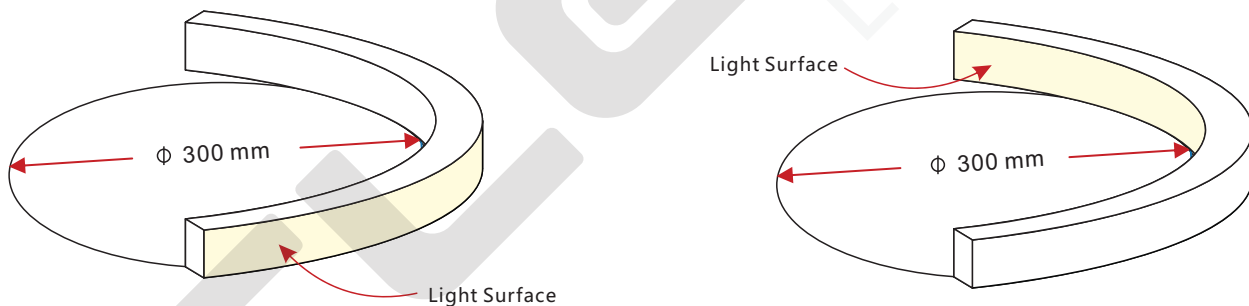
## 2. Functions & Features

### 2.1 Product Features

1. Dynamic white system with adjustable color temperature from 2200K to 5700K.
2. High quality SMD LED chip.
3. UV & flame resistant construction (silicone).
4. Perfect uniform & smooth illumination with invisible light dots.
5. Extremely flat profile and flush light surface.
6. High lumen output and IP rating (IP67).
7. Ultra flexible with 300mm minimum bending diameter.
8. Easy installation and assembly with injection-molded connectors.
9. Continuous length up to 15m by energized from one end.
10. Environmentally friendly & energy efficient.
11. Automated production, high reliability & long warranty.
12. 5 years life span.

### 2.2 Minimum Bend Diameter

C-SFR-F22D-VB



The light can only be bent along the light surface. Do not bend smaller than allowed minimum bend diameter.

## 3. Types of Connector

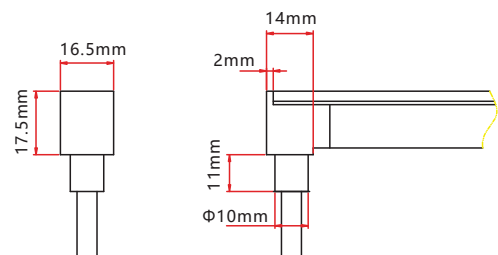
### 3.1 Injection-moulded Connector

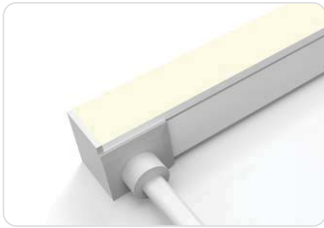
Note: Unless otherwise stated, the tolerance of the connector is  $\pm 0.5\text{mm}$ .



#### Injection-moulded Front Connector (bottom)

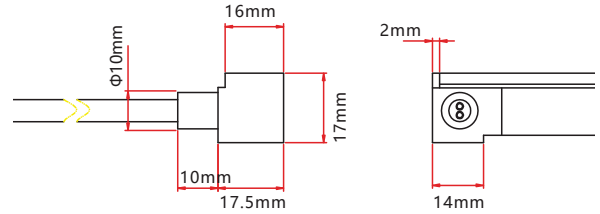
Connects light to power supply with pre-installed bottom feed cable IP67. Available in 0.3m, 1m, 3m, 5m, 10m lengths.





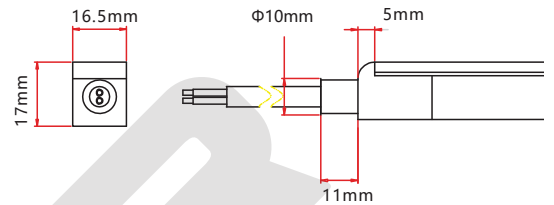
### Injection-moulded Front Connector (side)

Connects light to power supply with pre-installed side feed cable, IP67. Available in 0.3m, 1m, 3m, 5m, 10m lengths.



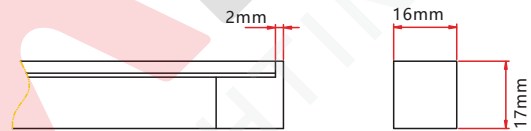
### Injection-moulded Front Connector (end)

Connects light to power supply with pre-installed end feed cable, IP67. Available in 0.3m, 1m, 3m, 5m, 10m lengths.



### Injection-moulded End Cap

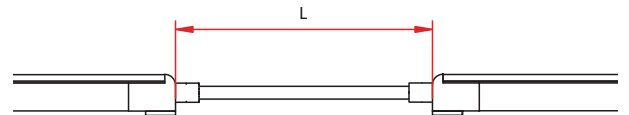
Pre-installed termination protection of the light, IP67.



### Injection-moulded Jumper

Connects two pieces of lights together with a flexible cable. IP67 Injection-moulded connector. L available in 0.3~1m.

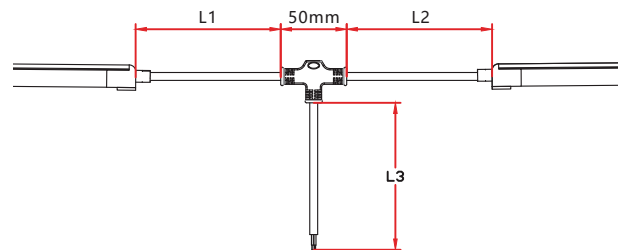
Maximum 8 Jumpers in 20m  
Maximum 4 Jumpers in 10m



### Injection-moulded T-feed

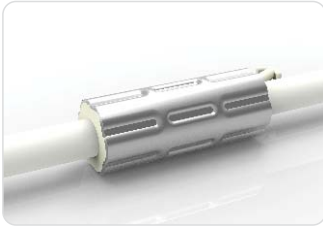
Connects two pieces of lights together with a T joint, energized from middle. IP67 Injection-moulded connector. L1 and L2 available in 0.15~0.5m. L3 available in 0.3-3m.

Maximum 8 T-feeds in 20m  
Maximum 4 T-feeds in 10m



### 3.2 Anti-wicking Ferrule

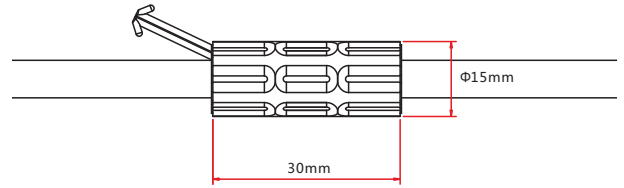
Note: Unless otherwise stated, the tolerance is  $\pm 0.5\text{mm}$ .



#### Anti-wicking Ferrule

The anti-wicking ferrule is located at 115mm ( $\pm 5\text{mm}$  tolerance) from the connector on the cable.

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



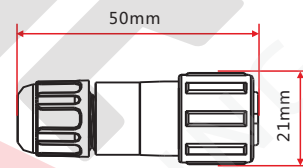
### 3.3 Male & Female Connector

Note: Unless otherwise stated, the tolerance is  $\pm 2\text{mm}$ .



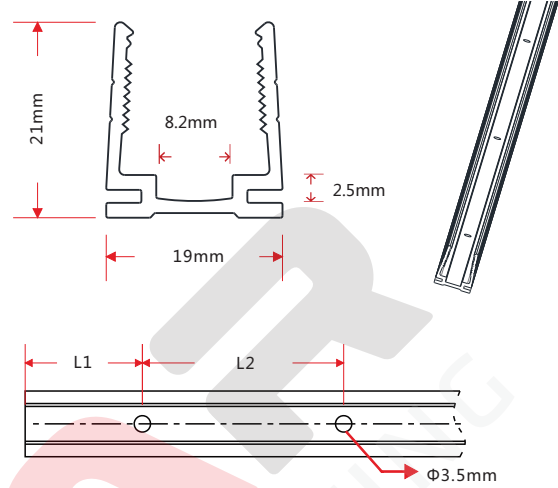
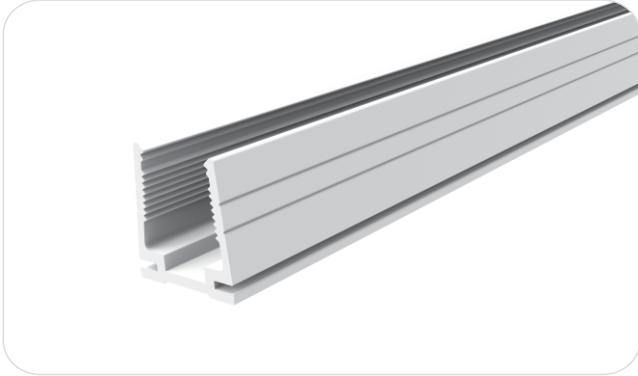
#### Male & female Connector

For plug and play cable junction, DIY or Pre-installed connector, IP68



# 4. Mounting Profile

## 4.1 Plastic Profile



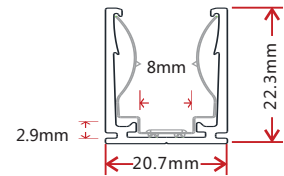
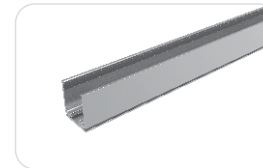
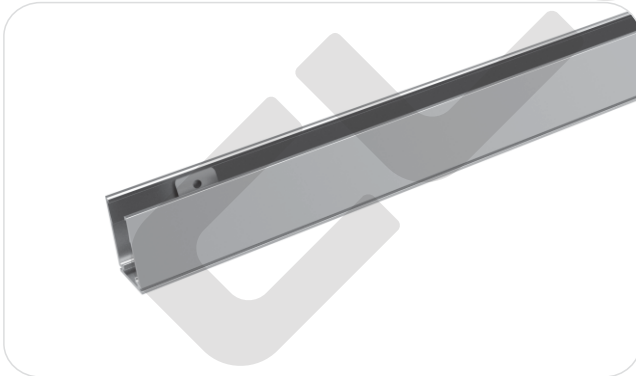
Note: Unless otherwise stated, the tolerance of the profile is ±0.5mm.

### Installation Way



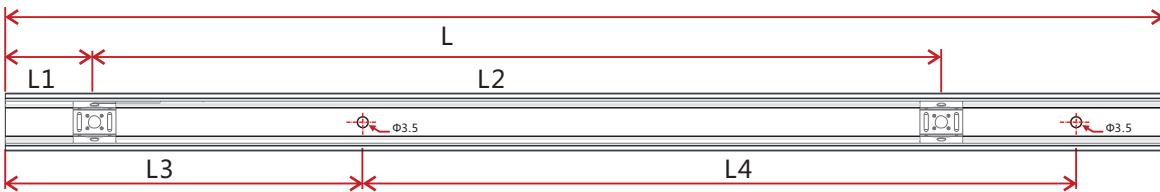
Model	W*H(mm)	Standard Length (mm)	L1 (mm)	L2 (mm)	Screw Hole (mm)	Hole Number	For Product
F22-PC/PL	19*21	500	50	200	Φ3.5	3	F22
		1000	100	200	Φ3.5	5	F22
		2000	100	200	Φ3.5	10	F22

## 4.2 Spring Clip Aluminum Profile



Note: Unless otherwise stated, the tolerance of the profile is ±0.5mm.

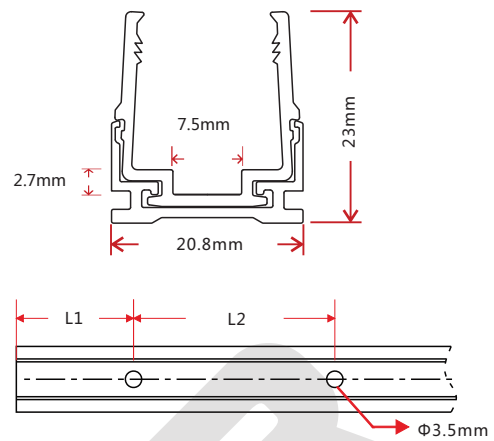
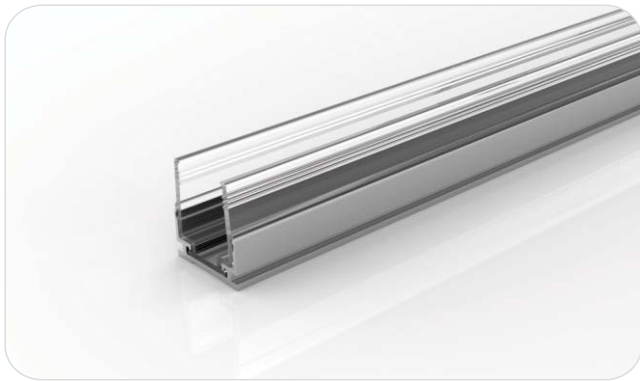
### Installation Way



Model	W*H(mm)	Standard Length(mm)	L1(mm)	L2(mm)	L3(mm)	L4(mm)	Hole Screw(mm)	Hole Number	Clip Number
F22-SCA/PL	20.7*22.3	35	17.5	/	5	25	Φ3.5	2	1
		500	25	150	50	200	Φ3.5	3	4
		1000	25	190	100	200	Φ3.5	5	6
		2000	25	195	100	200	Φ3.5	10	11



### 4.3 Hybrid Profile



Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5\text{mm}$ .

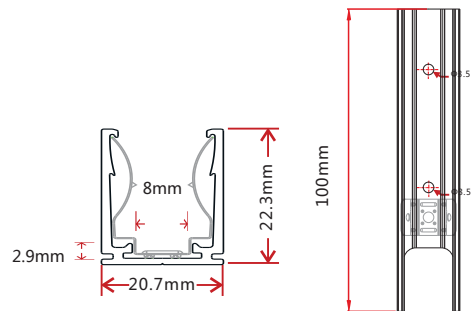
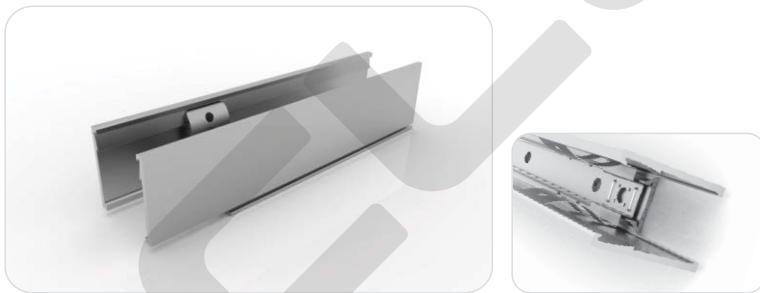
#### Installation Way



Model	W*H(mm)	Standard Length (mm)	L1 (mm)	L2 (mm)	Screw Hole (mm)	Hole Number	For Product
F22-PA/PL	20.8*23	35	17.5	/	Φ3.5	1	F22
		500	50	200	Φ3.5	3	F22
		1000	100	200	Φ3.5	5	F22
		2000	100	200	Φ3.5	10	F22

### 4.4 Cable Exit Oriented Aluminum Profile (Applicable to Injection-moulded Connector Only)

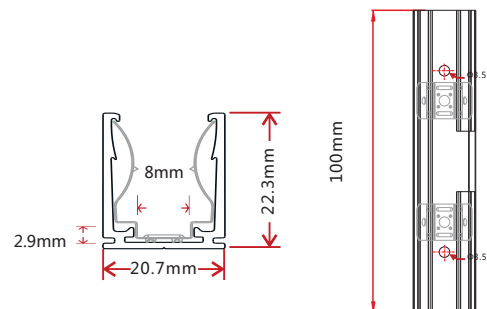
#### 4.4.1 Spring Clip Aluminum Profile, Bottom Feed



Model: F22-SCA/PL-B

Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5\text{mm}$ .

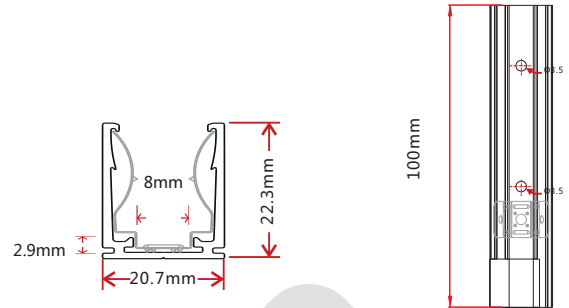
#### 4.4.2 Spring Clip Aluminum Profile, Middle Feed



Model: F22-SCA/PL-M

Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5\text{mm}$ .

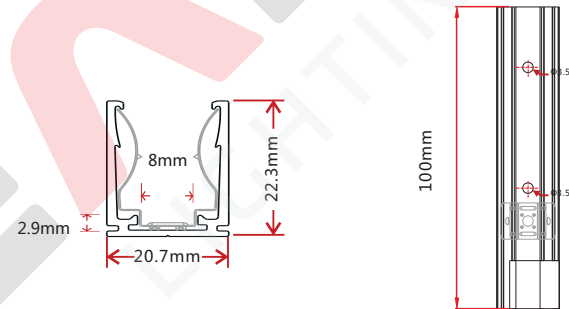
### 4.4.3 Spring Clip Aluminum Profile, Side Feed From Left



Model: F22-SCA/PL-SL

Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5\text{mm}$ .

### 4.4.4 Spring Clip Aluminum Profile, Side Feed From Right

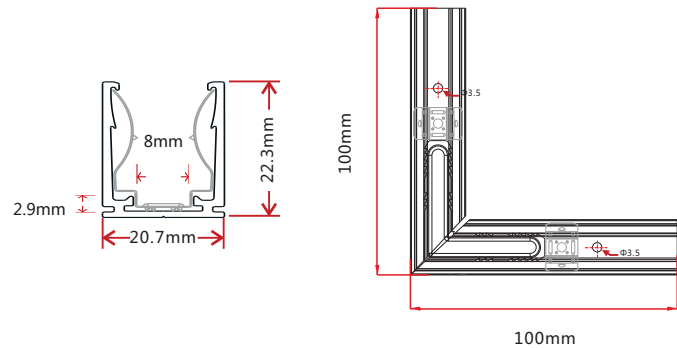


Model: F22-SCA/PL-SR

Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5\text{mm}$ .

## 4.5 Corner Aluminum Profile (Applicable to Injection-moulded Connector Only)

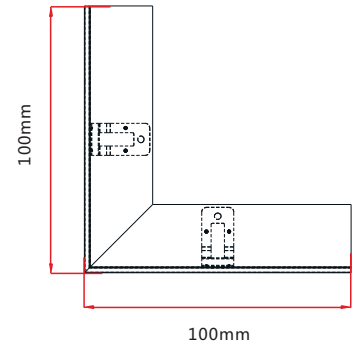
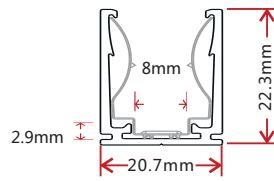
### 4.5.1 L Shape Spring Clip Aluminum Profile



Model: F22-SCA/PL-L

Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5\text{mm}$ .

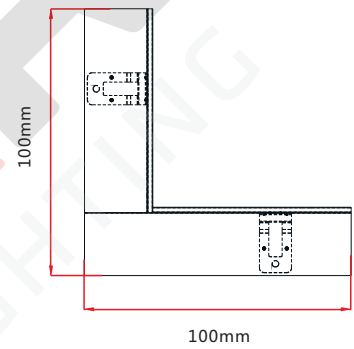
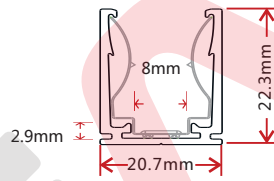
### 4.5.2 Inward L Shape Spring Clip Aluminum Profile



Model: F22-SCA/PL-IL

Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5\text{mm}$ .

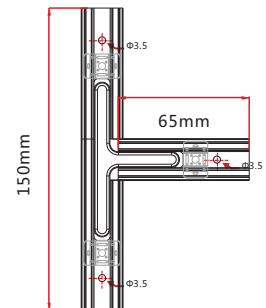
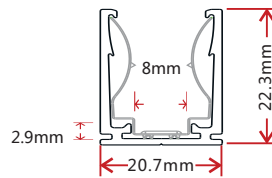
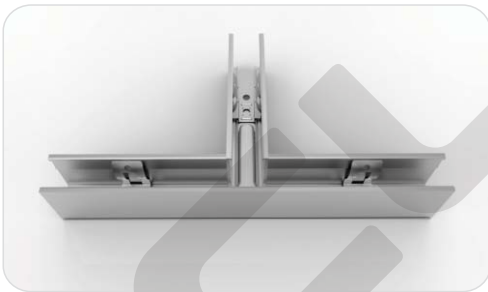
### 4.5.3 Outward L Shape Spring Clip Aluminum Profile



Model: F22-SCA/PL-OL

Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5\text{mm}$ .

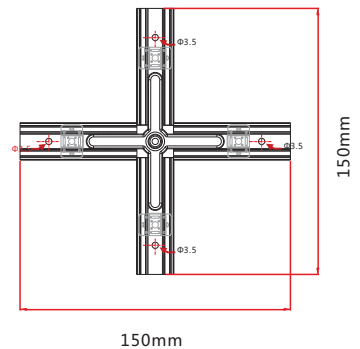
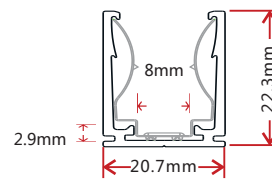
### 4.5.4 T Shape Spring Clip Aluminum Profile



Model: F22-SCA/PL-T

Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5\text{mm}$ .

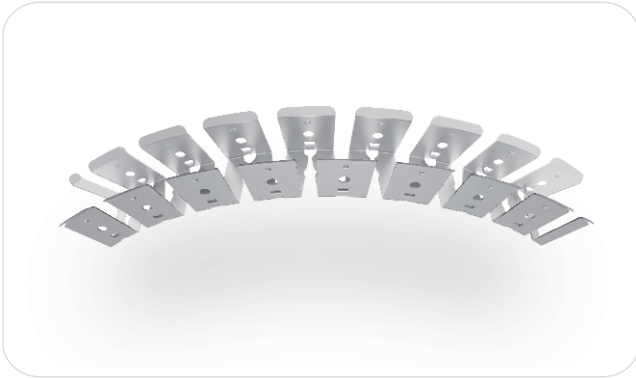
### 4.5.5 X Shape Spring Clip Aluminum Profile



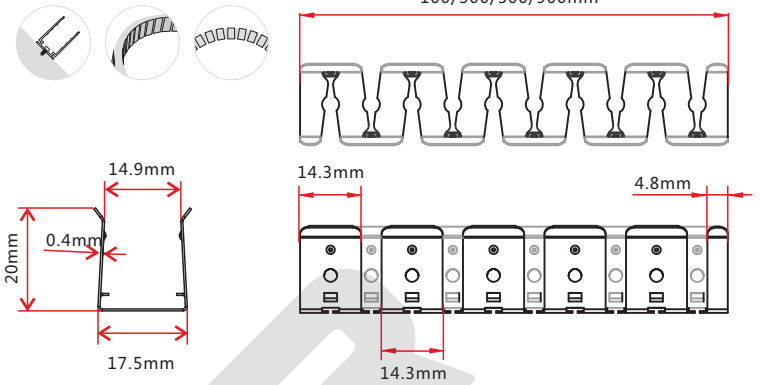
Model: F22-SCA/PL-X

Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5\text{mm}$ .

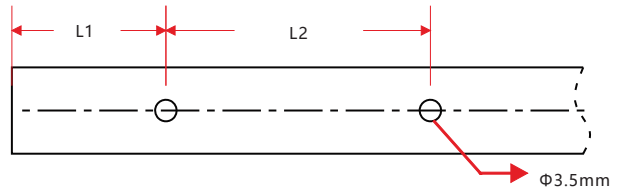
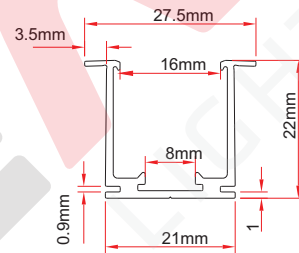
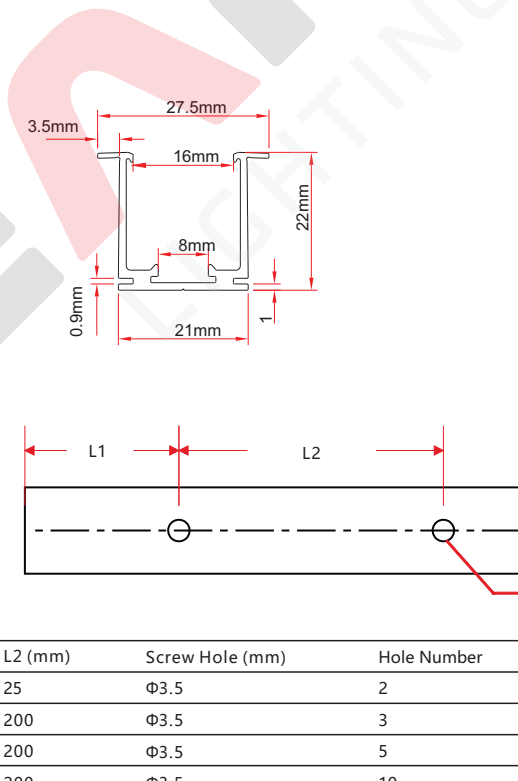
### 4.6 Bendable Stainless Steel Profile



Installation Way



### 4.7 Recessed Mounting Profile



Note: Unless otherwise stated, the tolerance of the profile is ±0.5mm.

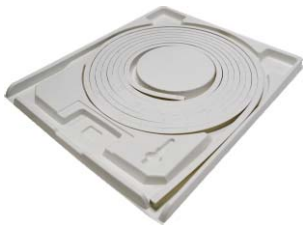
Installation Way



Model	W*H(mm)	Standard Length (mm)	L1 (mm)	L2 (mm)	Screw Hole (mm)	Hole Number	For Product
F22-RMA/PL	18*13.2	35	5	25	Φ3.5	2	F22
		500	50	200	Φ3.5	3	F22
		1000	100	200	Φ3.5	5	F22
		2000	100	200	Φ3.5	10	F22

## 5. Packaging

### Packaging Method



Plastic Plate



White Box



Carton



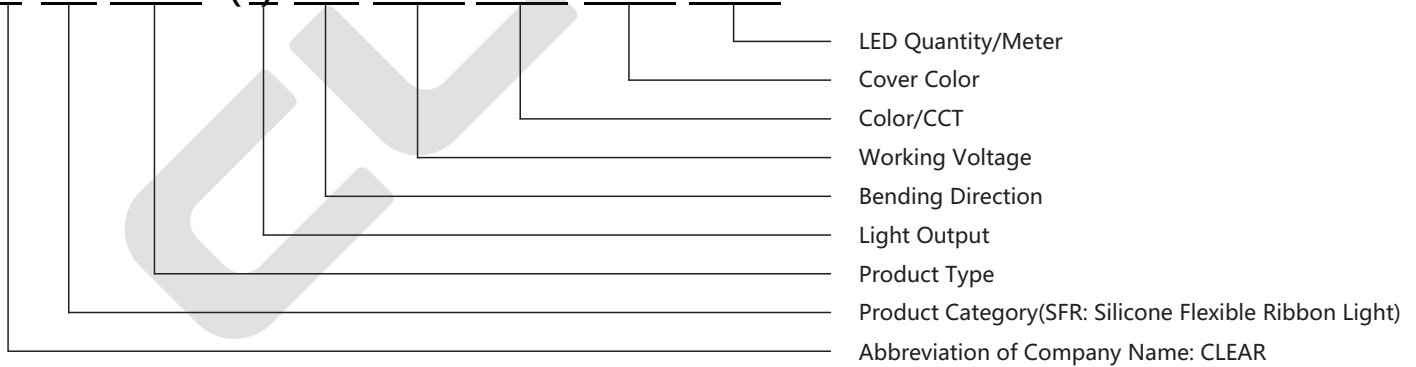
### Packaging Detail

Light Length	White Box Dimension (cm)	Carton Dimension (cm)	Numbers of White Box	Carton Weight (kg)
<4.5m	39*5.2*50	52*41*28	5	<8
5-8m	51*5.2*62	64*53*17.5	3	6-9
5-8m	51*5.2*62	64*53*28	5	9-14
10m	60*3.7*71	73*62*20	5	17
15m	68*5.2*79	81*70*12.5	2	11

## 6. Appendix

### 6.1 Product Naming Convention

**C-SFR-XXX(-)X-XX-XXX-XXX-XXX-XXX**



For Example: C-SFR-F22D-VB-24CV-22K~57K-WM-144

### 6.2 Certificate

Certificating Type	Testing Organization	Certificate Serial Number	Report Reference
UL 2108	UL	20160726-E360029	E360029-20130322
CE-EMC	SGS	SZEM1712012372LMV	SZEM171201237201

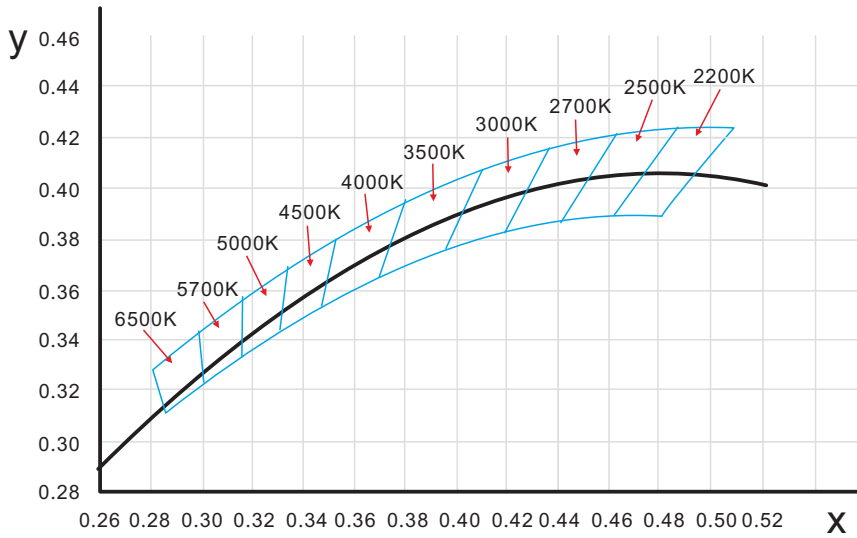
## 6.3 Third-Party Test Report

Testing Item	Testing Organization	Report Number
RoHS	SGS	CANEC1202163502 A01
IP68: Screw type	TUV SUD	68.140.12.136.02
IP68: Clasp type	SGS	GZES140200135301 GZES140200135401 GZES140200135501 GZES140200135701 GZES140200135801
IPX8: Molding type	SGS	SZES141200357301 SZES141200357401 SZES141200357501
IPX8: Snap type	SGS	GZES160600792031

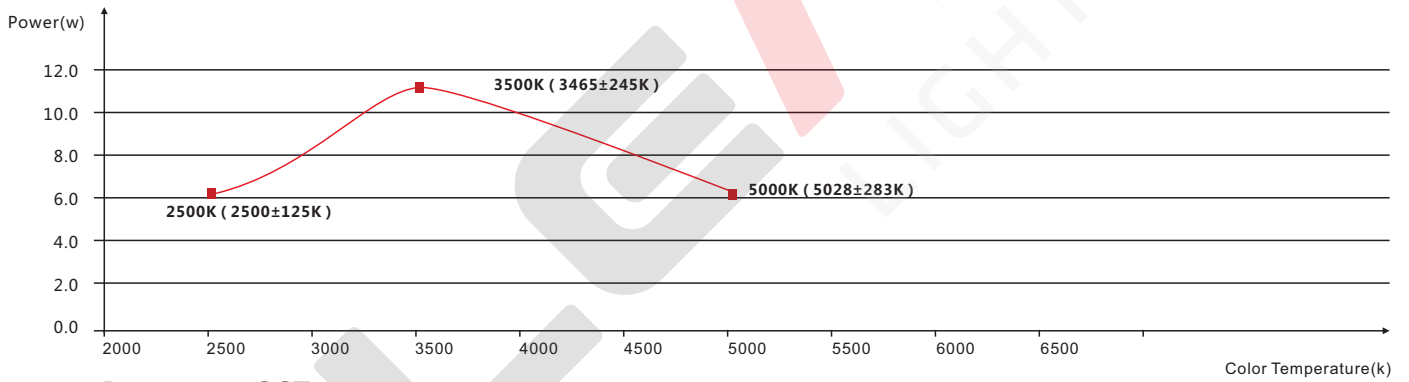
## 6.4 Reliability Test of Light

TESTING ITEM	PERFORMANCE	STANDARD/REFERENCE VALUE/DESCRIPTION
PHOTOMETRIC TESTING	Spectrum Analysis	IES LM 79 (lumen, CCT, CRI, XY, SDCM, wave length)
	Photometric Distribution	IES LM 79(lumen intensity distribution & Lux diagram)
	Lumen maintenance & Life time	IES LM84 & IES TM28
TEMPERATURE RISE TESTING	Normal Temperature Test	UL1598 & UL2388 & IEC60598-1 & IEC60598-2-21
	Abnormal Operation Test	UL1598 & UL2388 & IEC60598-1 & IEC60598-2-21
MECHANICS & PHYSICS TESTING	Bending Test	Manufacturer-defined, 500 cycles
	Swing Test	UL2388, >750 cycles
	Tensile Test	Manufacturer-defined, > the weight of light in maximum connection length with both ends feed
	Twist Test	Manufacturer-defined, >200 cycles
	Ball impact IK07 IK08	UL1598 & UL2388 & IEC60598-1 & IEC60598-2-21 IEC62262
WEATHERING TESTING	Swimming Pool Water Immersion Test	GB9667, PH6.8-7.6, free chlorine 0.3-0.6mg/L
	Sea Water Immersion Test	IEC60598-1, Salinity 4%
	Salt Spray Test	IEC68-2-11
	Outdoor Exposure	Manufacturer-defined
ENVIROMENT TESTING	Flame Resistant Test	UL94
	UV Exposure Test	ASTMG 154, ISO 4892-3, UVA@340nm
	IPX5 IPX6 IPX7 IPX8	IEC60529
ENDURANCE & THERMAL TEST LAB	Temperature Shock Test	Manufacturer-defined, -40°C-60°C (typical temperature range)
	Constant Temperature Test	Manufacturer-defined, 70°C (typical temperature)

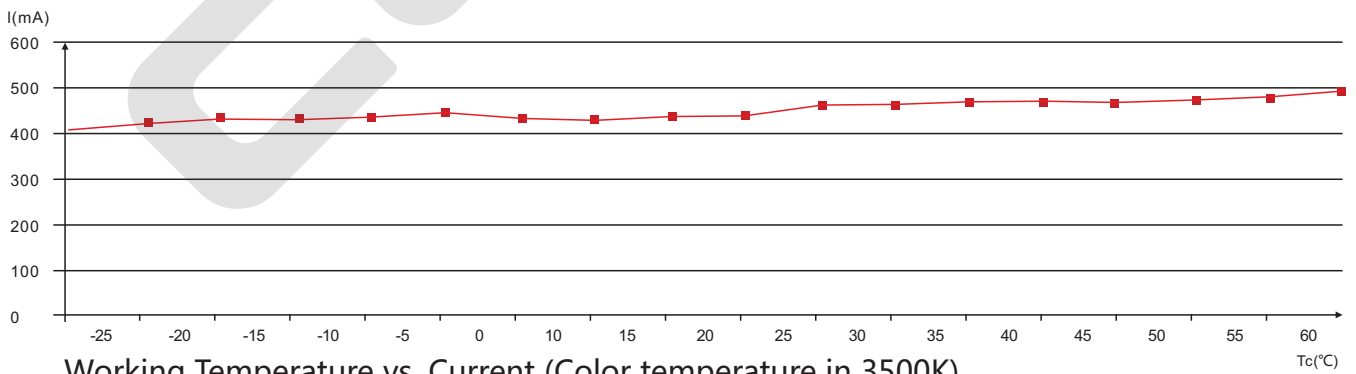
### 6.5 (X,Y) Chromaticity Diagram



### 6.6 Figures of Typical Characteristics



Power vs. CCT



Working Temperature vs. Current (Color temperature in 3500K)

## 6.7 Loading Chart

Type.	Rated Power /m	Power Supply											
		35w	60w	75w	80w	100w	120w	150w	120w	150w	185w	240w	320w
F22	8w	3.5m	6m	7.5m	8m	10m	12m	15m			18.5m	24m	30m
	12w	2m	4m	5m	5m	6.5m	8m	10m			12m	16m	20m
	15w/16.5w	1.5m	3m	3.5m	4m	4.5m			5.5m	7m	9m	10m	
	22w	1m	2m	2m	3m	3.5m	4m	5m			6.5m	8.5m	10m
Energizing way													

Note : 1. These are the light maximum recommended running length subject to selected power supply.  
 2. For example: It is recommended to use one 80W power supply loading maximum 8m light (8w/m) or maximum 5m light (12w/m) by energizing the light one end.

## 6.8 Correlated Color Temperature

### ANSI STANDARD

#### Nominal CCT Categories

Nominal CCT	Target CCT and tolerance(K)	Target $D_{uv}$	$D_{uv}$ Tolerance Range
2200K	2238 ±102	0.0000	$T_x$ : CCT of the source
2500K	2460±120	0.0000	For $T_x < 2870K$
2700K	2725 ±145	0.0000	$0.000 \pm 0.0060$
3000K	3045±175	0.0001	For $T_x \geq 2870K$
3500K	3465±245	0.0005	$D_{uv}(T_x) \pm 0.0060$
4000K	3985±275	0.0010	where
4500K	4503±243	0.0015	$D_{uv}(T_x) = 57700 \times (1/T_x)^2$
5000K	5029±283	0.0020	$-44.6 \times (1/T_x)$
5700K	5667±355	0.0025	$+0.00854$
6500K	6532±510	0.0031	
Flexible CCT (2200-6500K)	$T_F^{1)} \pm \Delta T^{2)}$	$D_{uv} T_F^{3)}$	

#### Remark:

- 1)  $T_F$  is chosen to be at 100K steps (2300,2400,.....,6400K), excluding the ten nominal CCTs listed in Table 1.
- 2)  $\Delta T = 1.1900 \times 10^8 \times T^3 - 1.5434 \times 10^4 \times T^2 + 0.7168 \times T - 902.55$
- 3) Same as in the  $D_{uv}$  Tolerance Range.