surelight

Neon light Square Range

Specification

c UL US LISTED   C E   TÜV SÜD   RoHS COMPLIANT

Table of Contents

Introduction

NE-SQP is a member of the Artist of Light series, embodied all the benefits of RGB and Single Colour products with the addition of DMX addressable technology, it integrates with an IC Chip that allows every pixel is individually addressable with discrete control of each 83.33mm.

NE-SQP is not only available in RGB but also RGBW and Dynamic White, which enables the capability of producing millions of colours and impressive eye-catching effects when paired with DMX Controller and SPI/universal decoder.
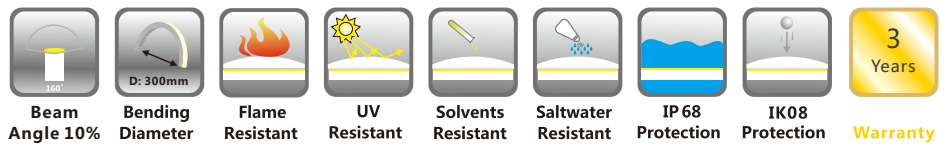
NE-SQP has passed rigorous environmental resistance, optical, mechanical and electrical tests in our lab under the support of advanced experimental equipments and technology to ensure it meets the requirements of harsh environments. Also it has passed relevant tests of third party inspection authority.

Fully encapsulated in the flexible PVC chamber by utilizing consummate extrusion technology, and pre-installed injection moulded connector to achieve IP68 protection, easy for installation and applicable for various circumstances.
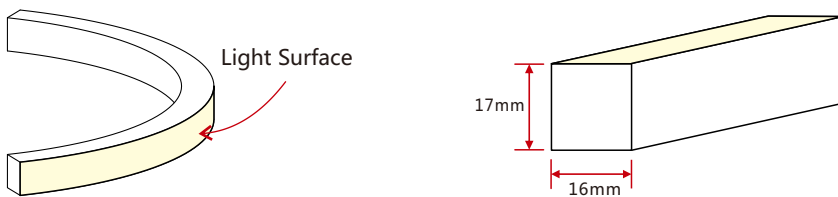
Applications:
1. Outdoor or Indoor Contour/Border Lighting
2. Architectural Outline/Decorative Lighting
3. Cove/Accent Lighting
4. Facade/Terrace Floor Lighting
5. Display Lighting

1. Specifications & Parameters

| Beam Angle 10% | Bending Diameter | Flame Resistant | UV Resistant | Solvents Resistant | Saltwater Resistant | IP 68 Protection | IK08 Protection | 3 Years Warranty |

1.1 Dimensions of Light

Light Surface

17mm

16mm

Note: Unless otherwise stated, the tolerance of the light is ±0.3mm.

1.2 Technical Parameters

Technical Parameters

| Article No.	NE-SQP	NE-SQP
Colour	RGB	RGBW
IC Type	UCS2903	UCS2904
Working Voltage	DC24V	DC24V
Rated Power/m	16.5W	22W
LED Qty/m	84LEDs	84LEDs
LED Distance	11.9mm	11.9mm
Min. Cutting Unit	7LEDs(1unit)	7LEDs(1unit)
Min. Cutting Length	83.3mm(1unit)	83.3mm(1unit)
Continuous Length	10m (Dynamic Operating)	10m (Dynamic Operating)
	5m (Static Full Loading)	5m (Static Full Loading)
Weight/m	325g	
Storage Temperature	-20 ~ 60℃	
Environmental Working Temperature	-20 ~ 45℃	
Environmental Installation Temperature	0 ~ 45℃	
IP Rating	IP68	

Note: For this product that over 12W per meter, full loading operating is not recommended.
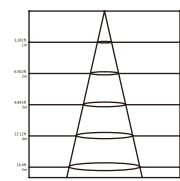
1.3 Optical Parameters

Photometric Data

Article No.	NE-SQP			
LED Type	SMD			
Beam Angle 10%	160°			
Colour	Wavelength	Lumen/m	CCT	Lumen/m
Red	620-630nm	>80lm	2725±145K	>220lm
Green	520-530nm	>270lm	3985±275K	>220lm
Blue	465-475nm	>42lm		

Candle power distribution
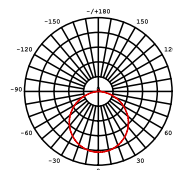
Illuminance Characteristics

2. Functions & Features

2.1 Product Features

1. High quality EPISTAR SMD LED chip.
2. UV & flame resistant construction(PVC).
3. Extremely flat profile for slimline projects.
4. Perfect uniform & even light source with invisible light dots.
5. Not only available in RGB but also RGBW and Dynamic White.
6. Pre-installed injection moulded connector available, no need to do connector assembly.
7. High IP rating (IP68).
8. Up to 10m length when dynamic programming with power feed from single end.
9. Environmentally friendly & energy efficient.
10. Automated production, high reliability & long warranty.
11. 5 year life span.

2.2 Minimum Bend Diameter

Light Surface

φ 300 mm

φ 300 mm
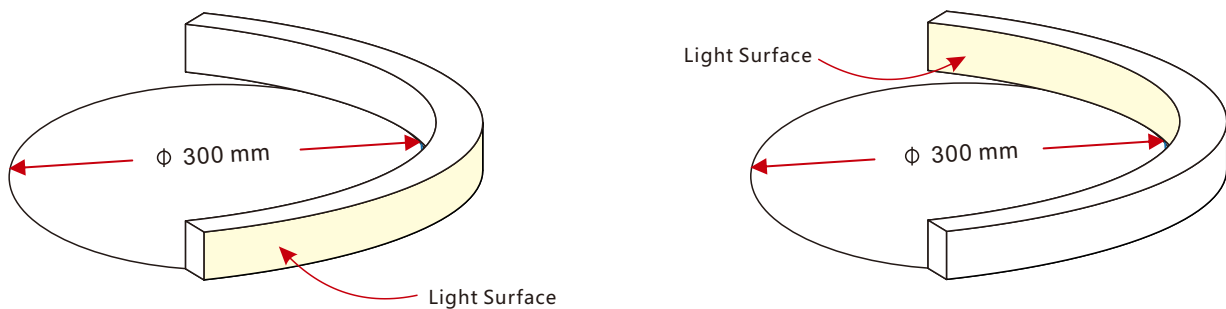
Light Surface

The light can only be bent along the light surface. Do not bend smaller than allowed minimum bend diameter.
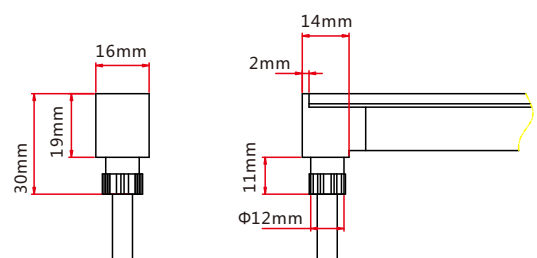
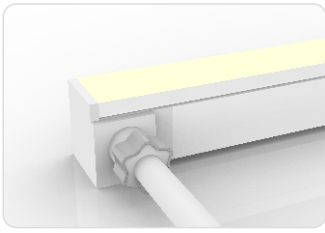# 3. Types of Connector

3.1 Injection-moulded Connector

Note: Unless otherwise stated, the tolerance of the connector is ±0.5mm.
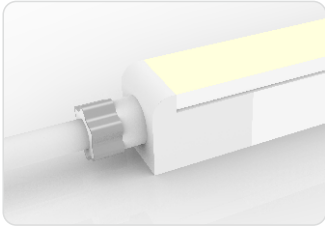
Injection-moulded Front Connector (bottom)

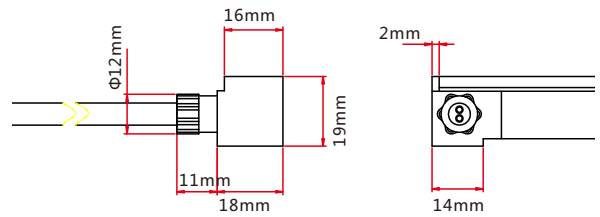Connects light to power supply with pre-installed bottom feed cable IP67. Available in 0.3m, 1m, 3m, 5m, 10m lengths.

16mm
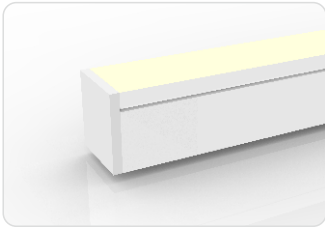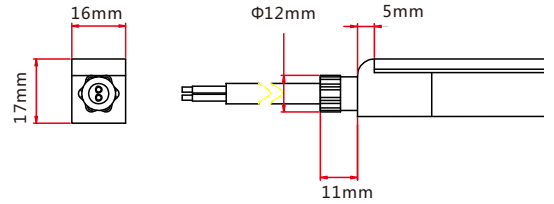
19mm

30mm

14mm

2mm

11mm

Φ12mm

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.
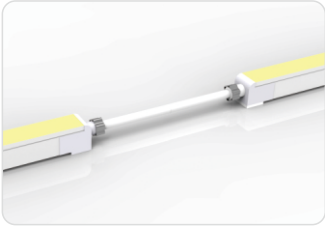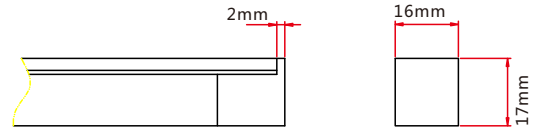
16mm · Φ12mm · 2mm · 19mm · 11mm · 18mm · 14mm

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.
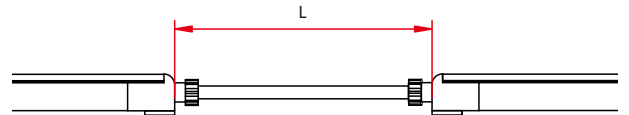
16mm · 17mm · Φ12mm · 5mm · 11mm

Injection-moulded End Cap

Pre-installed termination protection of the light, IP67.

2mm · 16mm · 17mm

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
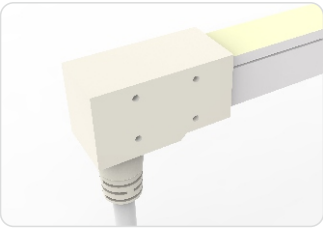
L

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.

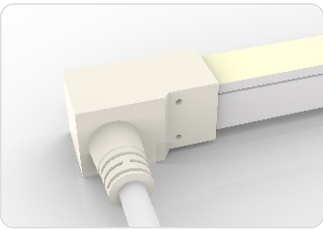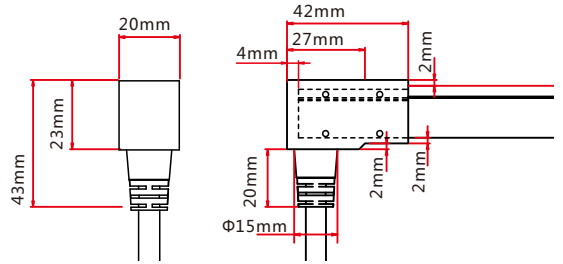Maximum 8 T-feeds in 20m
Maximum 4 T-feeds in 10m

L1 · 50mm · L2 · L3
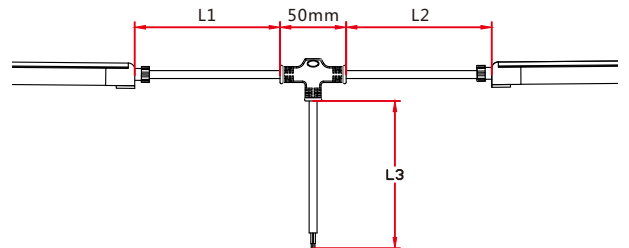
3.2 Dual Injection-moulded Connector

Note: Unless otherwise stated, the tolerance of the connector is ±0.5mm.
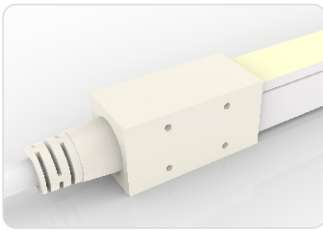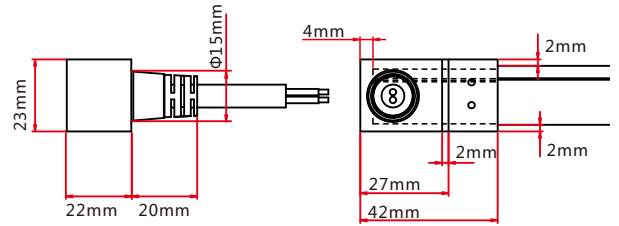
Dual Injection-moulded Front Connector (bottom)

Connects light to power supply with pre-installed bottom feed cable, IP68. Cable length available in 0.3m, 1m, 3m, 5m, 10m, 15m, 20m.
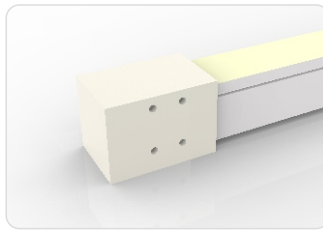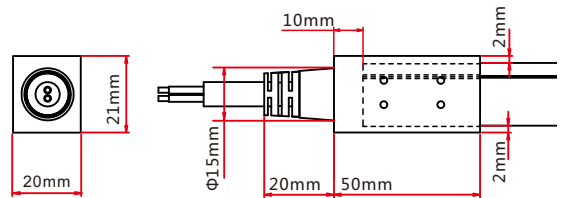
Dual Injection-moulded Front Connector (side)

Connects light to power supply with pre-installed side feed cable, IP68. Cable length available in 0.3m, 1m, 3m, 5m, 10m, 15m, 20m.
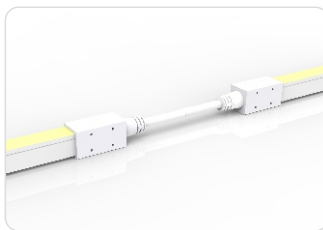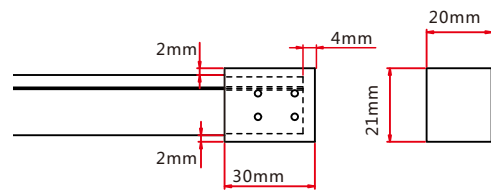
Dual Injection-moulded Front Connector (top end)

Connects light to power supply with pre-installed end feed cable, IP68. Cable length available in 0.3m, 1m, 3m, 5m, 10m, 15m, 20m.

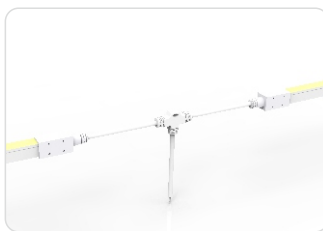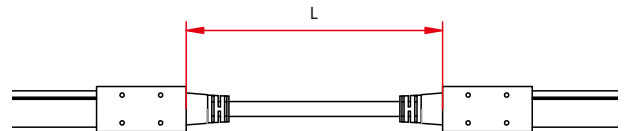### Dual Injection-moulded End Cap

Pre-installed termination protection of the light, IP68.

Dual Injection-moulded Jumper

Connects two pieces of lights together with a flexible cable. IP68 Dual Injection-moulded connector. L available in 0.3~1m.
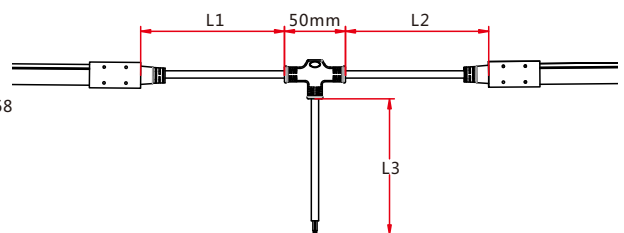
Maximum 8 Jumpers in 20m
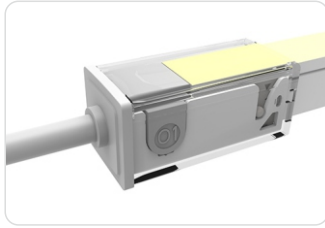Maximum 4 Jumpers in 10m

Dual Injection-moulded T-feed

Connects two pieces of lights together with a T joint, energized from middle. IP68 Dual Injection-moulded connector. L1 and L2 available in 0.15~0.5m. L3 available in 0.3-3m.

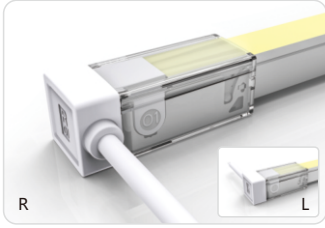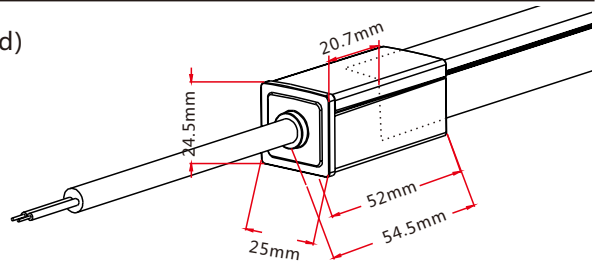Maximum 8 T-feeds in 20m
Maximum 4 T-feeds in 10m

3.3 Snap Connector

Snap Front Connector(top end)

Connects light to power supply, IP67 DIY connector. Cable available in 0.3m, 1m, 3m, 5m, 10m, 15m, 20m lengths.

Feed connector with silicone gasket *1 (Three-pin)
Anti-skidding clip *1
U steel plate *1
PC Cover * 1

20.7mm
24.5mm
52mm
54.5mm
25mm

Snap Front Connector(side right/left)

Connects light to power supply, IP67 DIY connector. Cable available in 0.3m, 1m, 3m, 5m, 10m, 15m, 20m lengths.

Feed connector with silicone gasket *1 (Three-pin)
Anti-skidding clip *1
U steel plate *1
PC Cover * 1

R   L

62mm
30mm
24.5mm
25mm

Snap Front Connector(bottom)

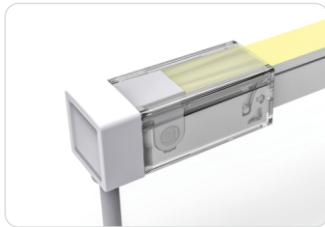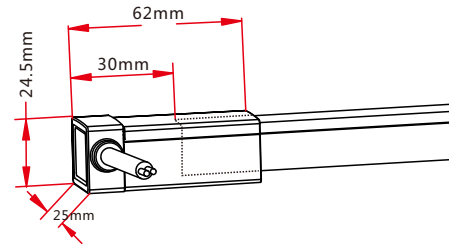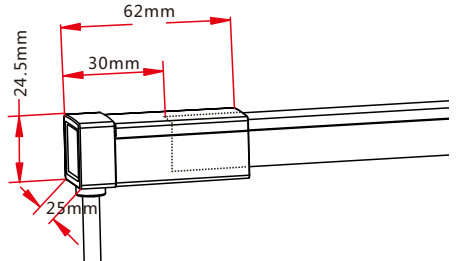Connects light to power supply, IP67 DIY connector. Cable available in 0.3m, 1m, 3m, 5m, 10m, 15m, 20m lengths.

Feed connector with silicone gasket *1 (Three-pin)
Anti-skidding clip *1
U steel plate *1
PC Cover * 1

62mm
30mm
24.5mm
25mm

Snap End Cap

Termination protection of the light, IP67 DIY connector.

Tail plug wite silicone gasket *1
Anti-skidding clip *1
U steel plate *1
PC Cover * 1

20.7mm
24.5mm
52mm
25mm
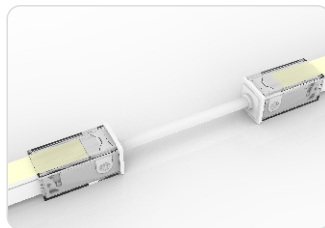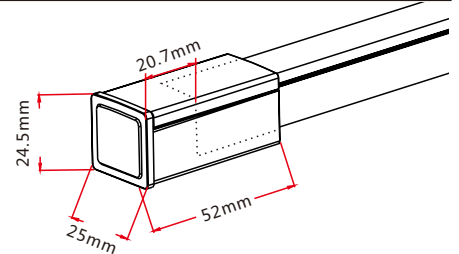
Snap Jumper

Connects two pieces of lights together with a flexible cable. IP67 DIY connector. L available in 0.3m, 1m and 3m.
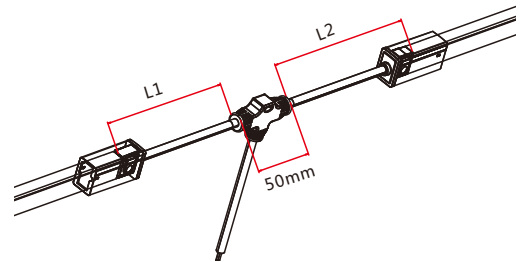
Double-end feed connector*1 (Three-pin)
Silicone gasket*2
U steel plate*2
Anti-skidding clip*2
PC cover*2

L
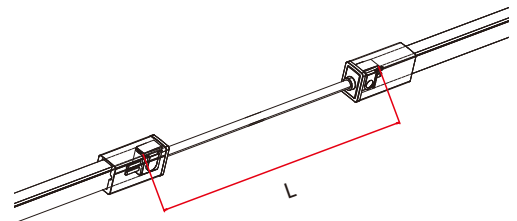
Snap Power T-feed

Connects two pieces of lights together with a T joint, energized from middle. IP67 DIY connector. L1 and L2 available in 0.3m.

T joint*1 (Three-pin)
Silicone gasket*2
U steel plate*2
Anti-skidding clip*2
PC cover*2

L2
L1
50mm

3.4 Anti-wicking Ferrule

Note: Unless otherwise stated, the tolerance is ±0.5mm.
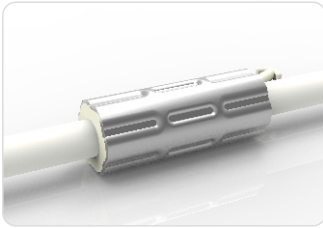
Anti-wicking Ferrule

The anti-wicking ferrule is located at 115mm (±5mm tolerance) from the connector on the cable.

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

Φ15mm

30mm
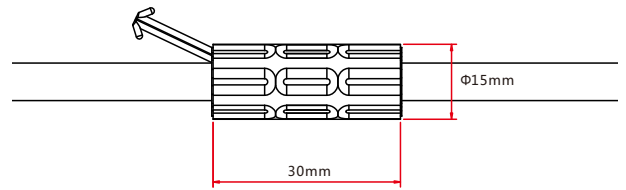
3.5 Male & Female Connector

Note: Unless otherwise stated, the tolerance is ±2mm.

Male & female Connector

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

50mm

21mm

4. Compatible DMX Control System
(Recommended)

4.1 LT-200 Unit

1. SPI signal output, control light directly to achieve max.540 lighting effects.
2. Support third-party DMX 512 interface, it can be realized DMX management mode, invoke controller's most function by DMX console.
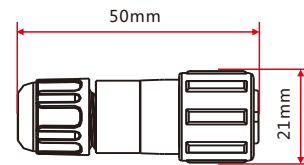3. It can work as DMX-SPI decoder, using DMX 512 console to control every channel and program new changing effect.

Suitable for controlling maximum 100m by series connection and each length maximum 15m.

4.2 LT-800 & LT-DMX-1809 Unit

LT-800

LT-1809

1. LT-1809 decoder works to convert DMX512 digital signal to SPI (TTL) digital signal, realizing the function of 0~100% dimming or editing all sorts of change effect.
2. LT-800 DMX512 controller works with LT-1809 decoder to control lights .
3. Each LT-800 DMX512 controller can control max. 32 sets LT-1809 decoders.
Note: A DMX console is required when connect LT-DMX-1809 with RGBW Pixel LED Neon that has 4 channels per pixel

Suitable for relatively large projects; each decoder can control max. 15m lights.

4.3 LT-600 Unit

1. Offline SD card store request programme. Ethernet real time computer control via synchronous display.
2. DMX 512 and SPI signal outputs are optional; can be connected with DMX console to form lighting control network.
3. Extra large control capability, 16 channels signal output, max. control 30720 pixels.

Suitable for large projects; each channel can control max. 120m lights, each LT-600 can control around 1600m lights.
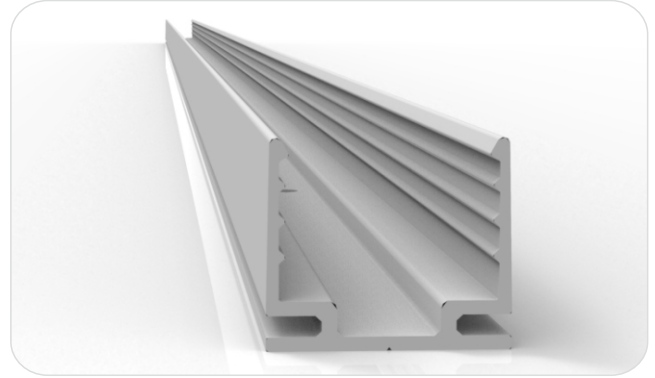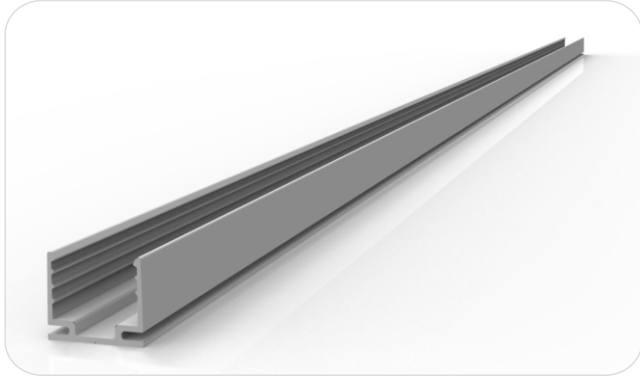
Note:
The Pixel Addressable Light series allows precise control of every cutting increment. To ensure IC chips receive strong control signals, please adhere to the parameters listed below.
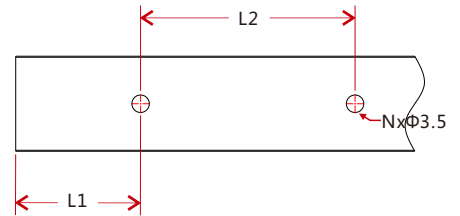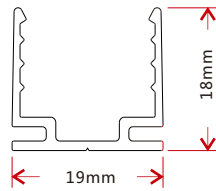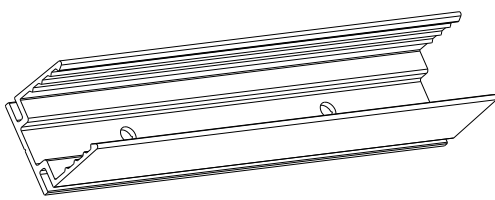
1) To ensure strong signal the 3-wire signal cable should not exceed 10m.
2) For cable lengths longer than 10m, a signal amplifier must be used for strong signal transmission. Please ask our technical team for more details.
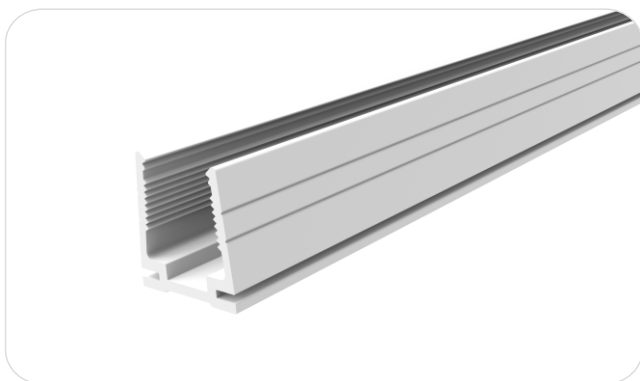
5. Mounting Profile

5.1 Standard Aluminum Profile

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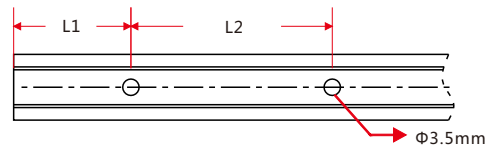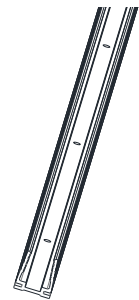

Model	W*H(mm)	Standard Length (mm)	L1 (mm)	L2 (mm)	Screw Hole (mm)	Hole Number	For Product
NE-SQP	19*18	35	17.5	/	Φ3.5	1	SQ
		500	50	200	Φ3.5	3	SQ
		1000	100	200	Φ3.5	5	SQ
		2000	100	200	Φ3.5	10	SQ

5.2 Plastic Profile

Note: Unless otherwise stated, the tolerance of the profile is ±0.5mm.
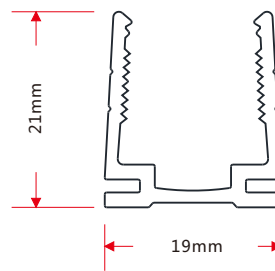
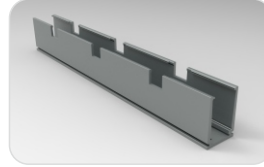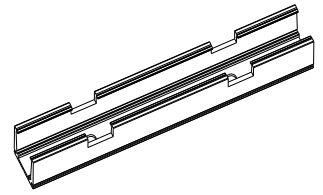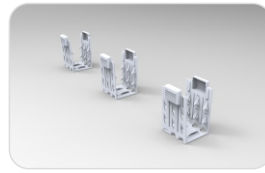| Model	W*H(mm)	Standard Length (mm)	L1 (mm)	L2 (mm)	Screw Hole (mm)	Hole Number	For Product
NE-SQP	19*21	500	50	200	Φ3.5	3	SQ
		1000	100	200	Φ3.5	5	SQ
		2000	100	200	Φ3.5	10	SQ

5.3 Self-locking Aluminum Profile (Using with the Clip)
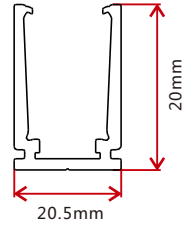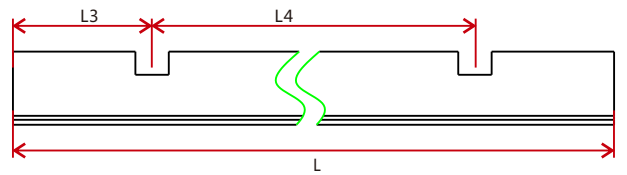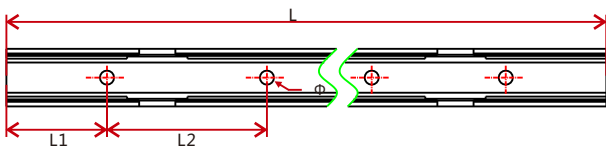
Note: Unless otherwise stated, the tolerance of the profile is ±0.5mm.

20mm

20.5mm

Model	W*H(mm)	Standard Length(mm)	L1(mm)	L2(mm)	L3(mm)	L4(mm)	Hole Screw(mm)	Hole Number	Clip Number
NE-SQP	20.5*20	35	17.5	25	5	/	Φ3.5	2	1
		500	50	200	75	350	Φ3.5	3	2
		1000	100	200	150	350	Φ3.5	5	3
		2000	100	200	125	350	Φ3.5	10	6

5.4 Self-locking Aluminum Profile Ver. 2 (Using with the Clip)

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

22.3mm

20.7mm

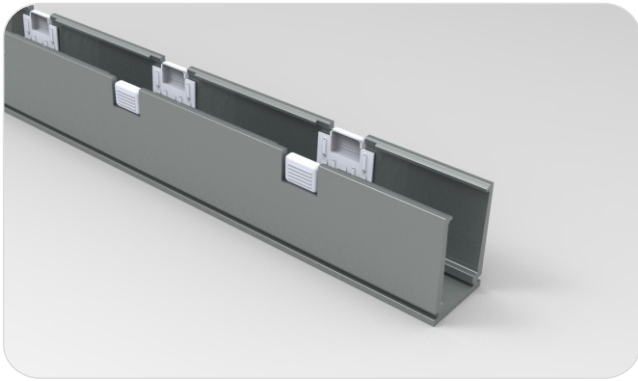| Model	W*H(mm)	Standard Length(mm)	L1(mm)	L2(mm)	L3(mm)	L4(mm)	Hole Screw(mm)	Hole Number	Clip Number
NE-SQP	20.7*22.3	35	17.5	/	5	25	Φ3.5	2	1
		500	25	150	50	200	Φ3.5	3	4
		1000	25	190	100	200	Φ3.5	5	6
		2000	25	195	100	200	Φ3.5	10	11

5.5 Plastic & Aluminum Combination Profile
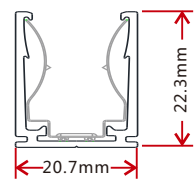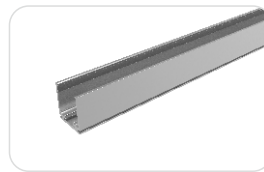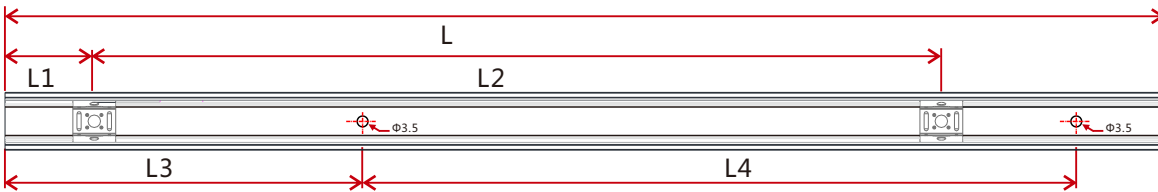

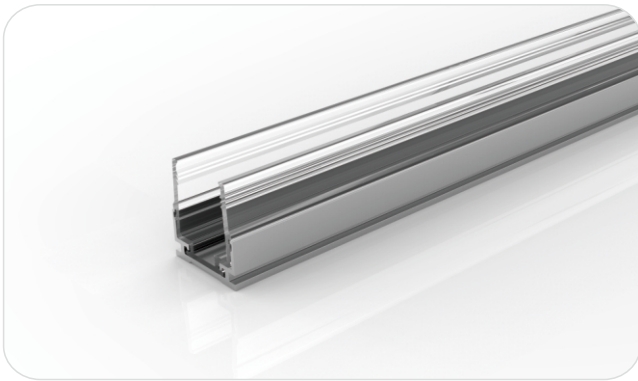Note: Unless otherwise stated, the tolerance of the profile is ±0.5mm.
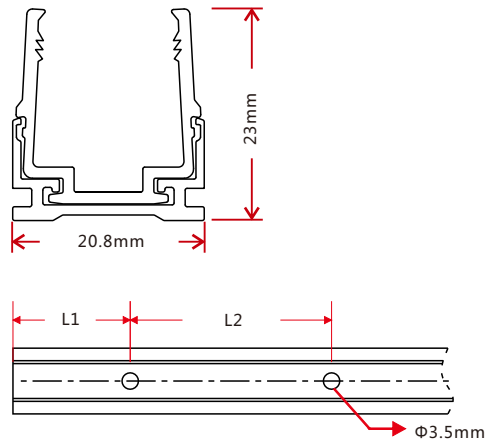
Model	W*H(mm)	Standard Length (mm)	L1 (mm)	L2 (mm)	Screw Hole (mm)	Hole Number	For Product
NE-SQP	20.8*23	35	17.5	/	Φ3.5	1	SQ
		500	50	200	Φ3.5	3	SQ
		1000	100	200	Φ3.5	5	SQ
		2000	100	200	Φ3.5	10	SQ

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

5.6.1 Self-locking Aluminum Profile Ver. 2, Bottom Feed (Using with the Clip)

Model: NE-SQP

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

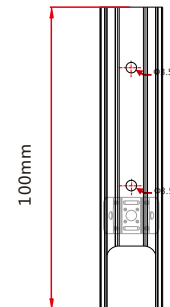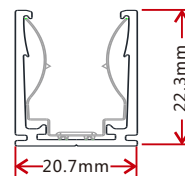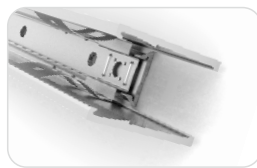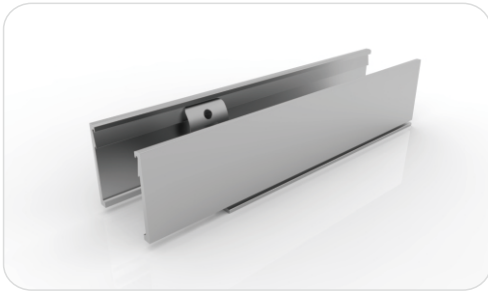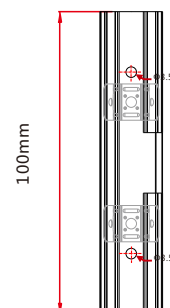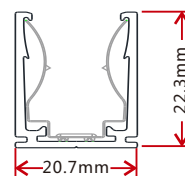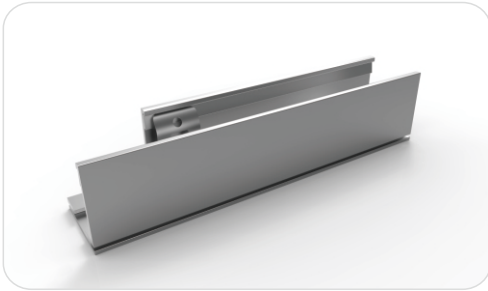### 5.6.2 Self-locking Aluminum Profile Ver. 2, Middle Feed (Using with the Clip)

Model: NE-SQP

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

5.6.3 Self-locking Aluminum Profile Ver. 2, Side Feed From Left (Using with the Clip)

Model: NE-SQP

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

22.3mm
20.7mm
100mm
Φ3.5
Φ3.5
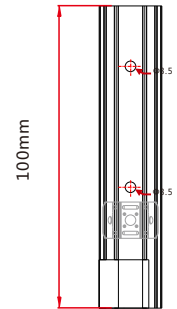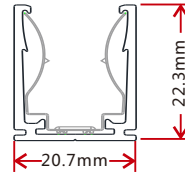
5.6.4 Self-locking Aluminum Profile Ver. 2, Side Feed From Right (Using with the Clip)
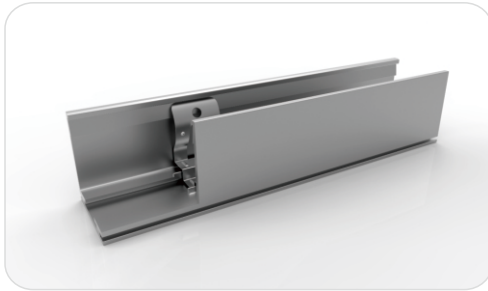
Model: NE-SQP

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

22.3mm
20.7mm
100mm
Φ3.5
Φ3.5

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

5.7.1 L Shape Self-locking Aluminum Profile Ver. 2 (Using with the Clip)
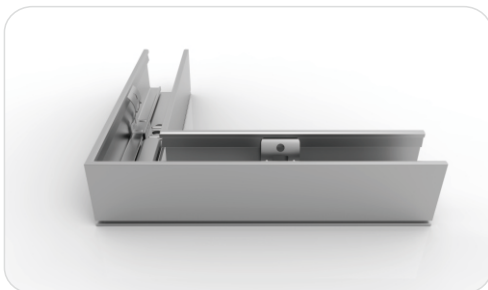
Model: NE-SQP

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

22.3mm
20.7mm
100mm
100mm
Φ3.5
Φ3.5

4.7.2 Inward L Shape Self-locking Aluminum Profile Ver.2 (Using with the Clip)

Model: NE-SQP

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

22.3mm

20.7mm

100mm

100mm

4.7.3 Outward L Shape Self-locking Aluminum Profile Ver.2 (Using with the Clip)
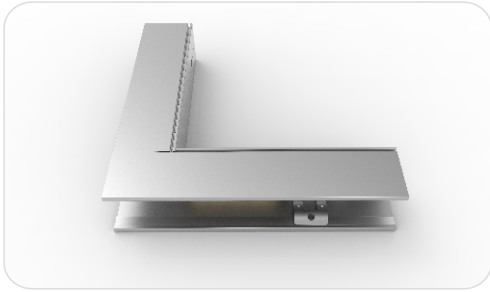
Model: NE-SQP

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

22.3mm

20.7mm

100mm

100mm

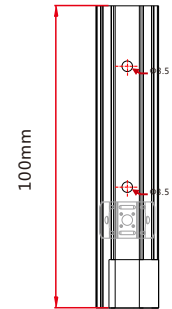## 4.7.4 T Shape Self-locking Aluminum Profile Ver. 2 (Using with the Clip)

Model: NE-SQP

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

22.3mm

20.7mm

Φ3.5

65mm

Φ3.5

150mm

Φ3.5

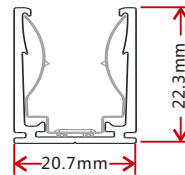## 4.7.5 X Shape Self-locking Aluminum Profile Ver. 2 (Using with the Clip)

Model: NE-SQP

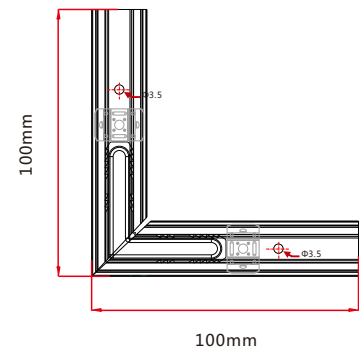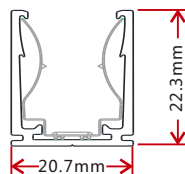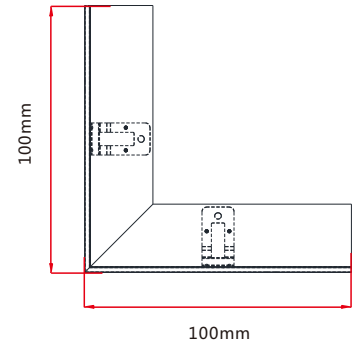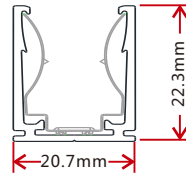Note: Unless otherwise stated, the tolerance of the profile is ±0.5mm.

22.3mm

20.7mm

Φ3.5

Φ3.5

Φ3.5

150mm
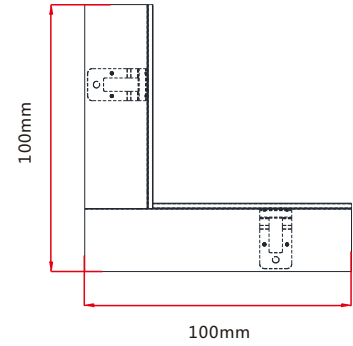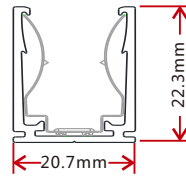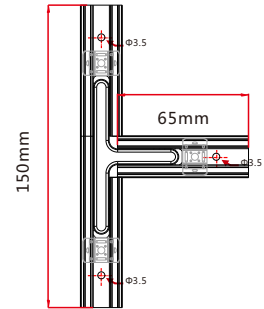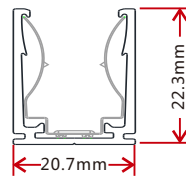
150mm
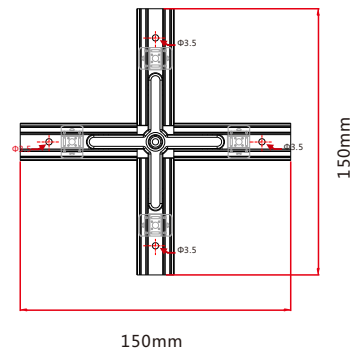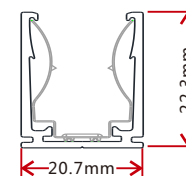
5.8 Curve Stainless Steel Profile
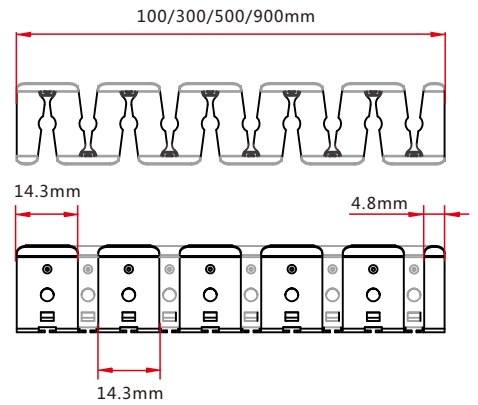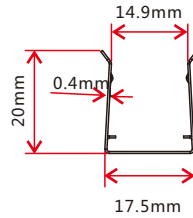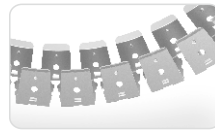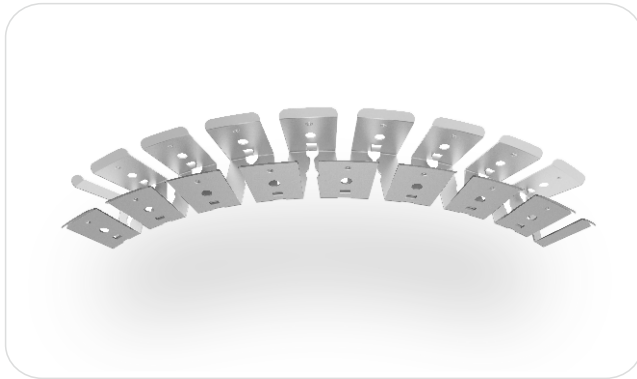
Model: NE-SQP

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

100/300/500/900mm

14.9mm
20mm
0.4mm
17.5mm

14.3mm
14.3mm
4.8mm

6.Packaging

Packaging Method
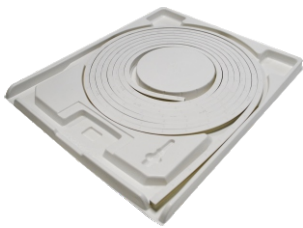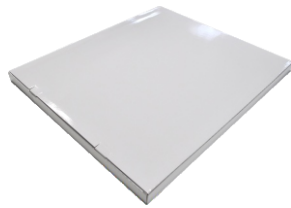
Plastic Plate   White Box   Carton

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

7. Appendix

7.1 Certificate

Certificating Type	Testing Organization	Certificate Serial Number	Report Reference
CE-EMC	SGS	SZEM1702001259LMV	SZEM160600421302

7.2 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
Flame retardant	TUV SUD	68.140.13.068.01
UV@340nm: Light	AOV	A002R130308065—1R01
UV@340nm: PVC	AOV	A002R130308065—2R01

>>Note: The testing reports and certificates are available from the related official website.

7.3 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	UL1598 & UL2388 & IEC60598-1 & IEC60598-2-21
	IK07 IK08	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℃-60℃ (typical temperature range)
	Constant Temperature Test	Manufacturer-defined , 70℃ (typical temperature)

7.4 (X,Y) Chromaticity Diagram
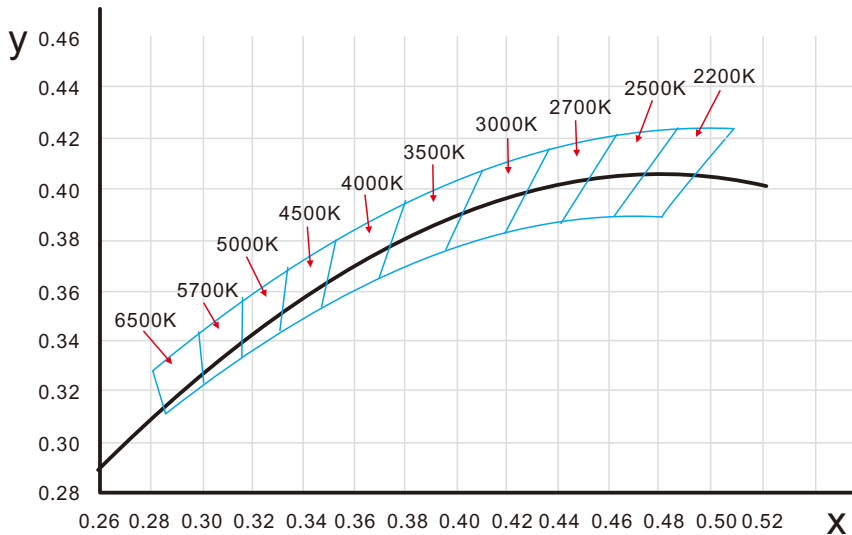
7.5 Wavelength of Colour Light

Light Color

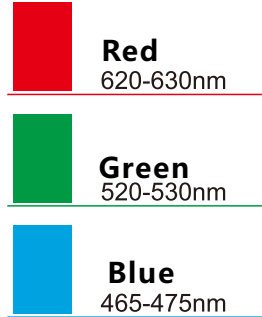|	
🟥	**Red** 620-630nm
🟩	**Green** 520-530nm
🟦	**Blue** 465-475nm
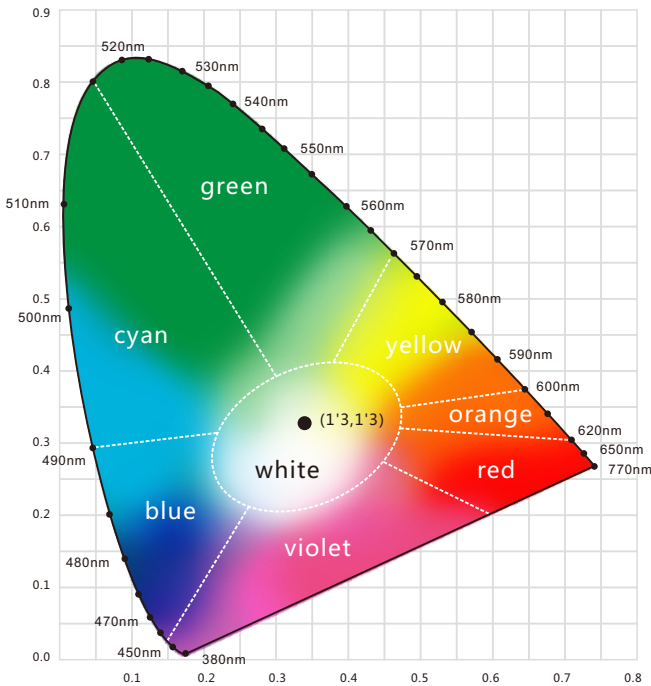
7.6 Correlated Colour Temperature

ANSI STANDARD

Nominal CCT Categories

Nominal CCT	Target CCT and tolerance(K)	Target D_{uv}	D_{uv} Tolerance Range
2200K	2238 ±102	0.0000	Tx:CCT of the source
2500K	2460±120	0.0000	For Tx<2870K
2700K	2725 ±145	0.0000	0.000±0.0060
3000K	3045±175	0.0001	For Tx≥2870K
3500K	3465±245	0.0005	Duv(Tx)±0.0060
4000K	3985±275	0.0010	where
4500K	4503±243	0.0015	Duv(Tx)=57700 x (1/Tx)2
5000K	5029±283	0.0020	-44.6 x (1/Tx)
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.

7.7 Loading Chart

Type.	Rated Power /m	Power Supply											
		35w	60w	75w	80w	100w	120w	150w	120w	150w	185w	240w	320w
NE-SQP	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		DC input 01/02							DC input 01		02		DC input

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.