# surelight Neon light Square Range Specification

# NE-SQ-VB-900









CE

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# Introduction

NE-SQ-VB-900 is a member of the Artist of Light series with monochromatic light to achieve your desired artistic effect, which employs constant current design-eliminating linear fade.

Built-in protection circuit design which means single LED failure has no effect on other LEDs working in the same unit and the whole light can keep constant lighting.

NE-SQ-VB-900 is UL/cUL, CE, TUV and RoHS compliant. Moreover, it has passed environmental resistance, optical, mechanical and electrical tests in our lab under the support of advanced experimental equipment and technology to ensure it meets the requirements of harsh environments.

Fully encapsulated in the flexible PVC chamber by utilizing consummate extrusion technology, assembled with multiple patent connectors to achieve IP68 protection. Easy for installation and applicable for various circumstances.

NE-SQ-VB-900 features particularly high luminous flux with homogeneous illumination and small bend diameter in both horizontal and vertical bending direction.

Applications:

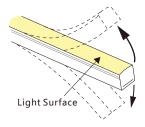
- 1. Outdoor or Indoor Contour/Border Lighting
- 2. Architectural Outline/Decorative Lighting
- 3. Cove/Accent Lighting
- 4. Facade/Terrace Floor Lighting
- 5. Display Lighting

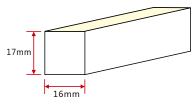
# 1. Specifications & Parameters



# **1.1 Dimensions of Light**

NE-SQ-VB-900





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

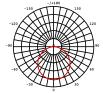
# **1.2 Technical Parameters**

Technical Parameters	
Article No.	NE-SQ-VB-900
Colour	White
Working Voltage	DC24V
Rated Power/m	15W
LED Qty/m	108LEDs
LED Distance	9.26mm
Min. Cutting Unit	6LEDs (1unit)
Min. Cutting Length	55.6mm(1unit)
Continuous Length	8m
Weight/m	325g
Storage Temperature	-20~60°C
Environmental Working Temperature	-20~45°C
Environmental Installation Temperature	0~45℃
IP Rating	IP68

# **1.3 Optical Parameters**

Photometr	ric Data	
Article No.	NE-SQ-VB-900	
LED Type	SMD	
Beam angle	160°	
Colour	ССТ	Lumen/m
2500K	2460±120K	>800lm
2700K	2725±145K	>800lm
3000K	3045±175K	>800lm
3500K	3465±245K	>900lm
4000K	3985±275K	>900lm
4500K	4503±243K	>900lm
5000K	5029±283K	>900lm
5700K	5669±355K	>850lm
6500K	6532±510K	>850lm





Illuminance C haracteristics



# 2. Functions & Features

# 2.1 Product Features

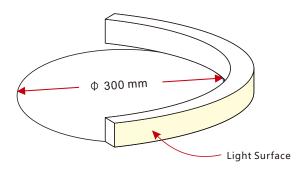
- 1. High quality SMD LED chip.
- 2. Protection Circuit: Each LED Protected.
- 3. UV & flame resistant construction(PVC).
- 4. Extremely flat profile for slimline projects.
- 5. Perfect uniform & even light source with invisible light dots.
- 6. High illumination.
- 7. Easily to be installed.
- 8. High IP rating (IP68)

9. The product IP rate is ultimately in line with properly applied IP rated connectors.

- 10. Continuous length up to 15m (R, A)/10m (G, B, W) by powering one end.
- 11. Environmentally friendly & energy efficient.
- 12. Automated production, high reliability & long warranty.
- 13. 5 years life span.

# 2.2 Minimum Bend Diameter

NE-SQ-VB-900



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

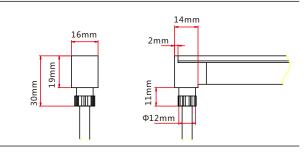
# 3. Types of Connector

# 3.1 Injection-moulded Connector

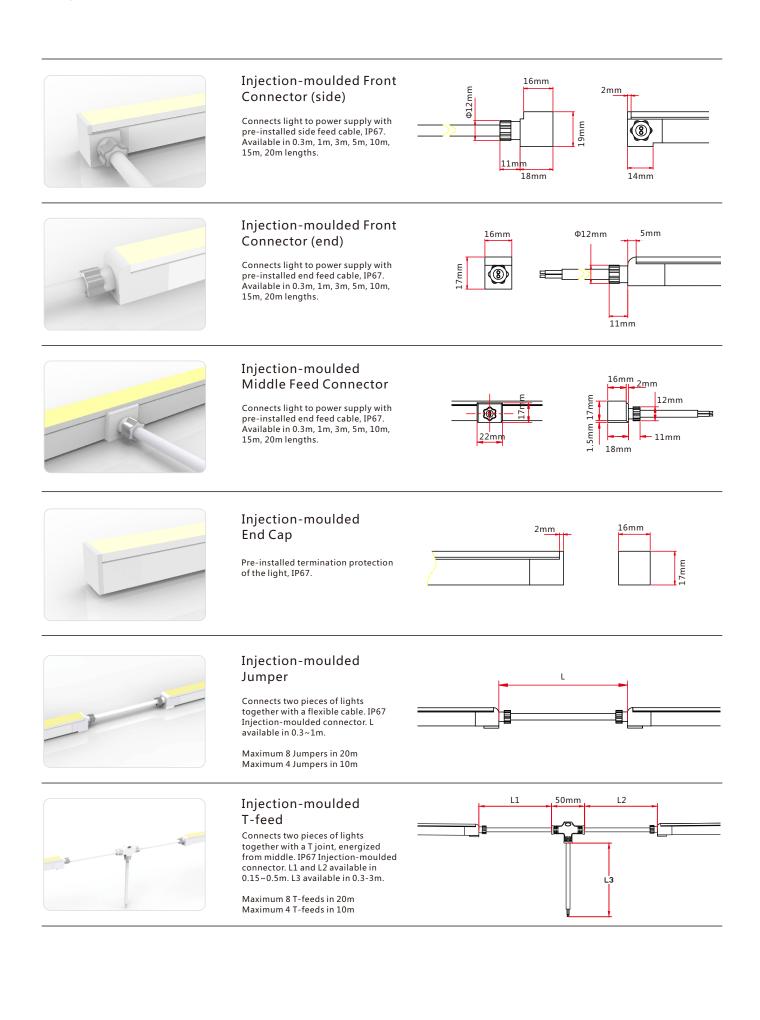


### Injection-moulded Front Connector (bottom)

Connects light to power supply with pre-installed bottom feed cable IP67. Available in 0.3m, 1m, 3m, 5m, 10m, 15m, 20m lengths.

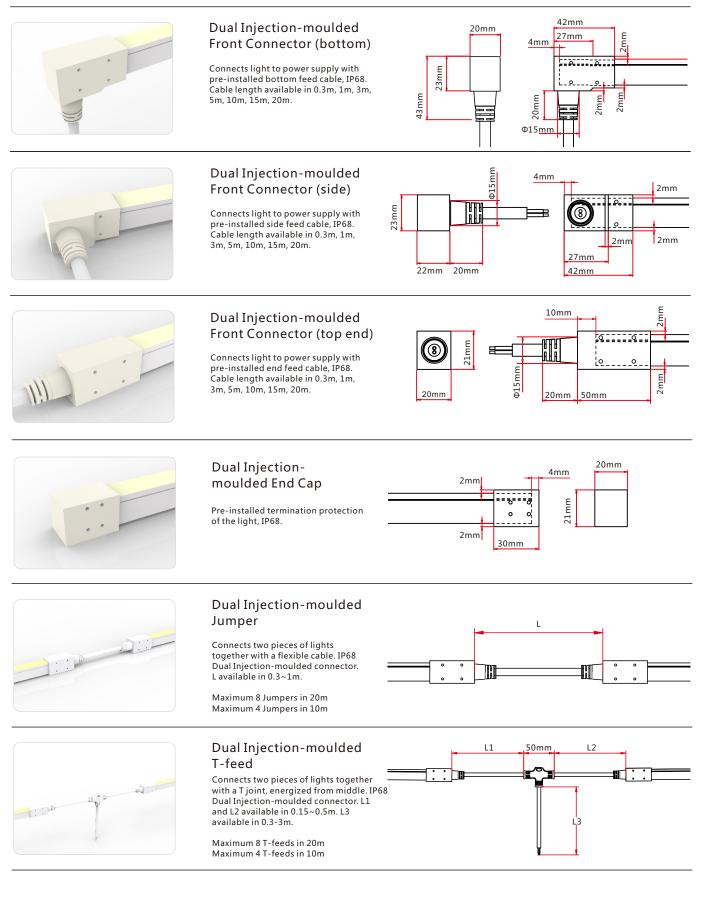


Note: Unless otherwise stated, the tolerance of the connector is  $\pm 0.5$  mm.



# 3.2 Dual Injection-moulded Connector

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



# 3.3 Clasp Connector

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



### **Clasp Front Connector**

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 (Two-pin) Anti-skidding clip \*1 U steel plate \*1

# Clasp End Cap

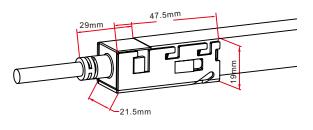
Termination protection of the light, IP67 DIY connector.

Tail plug \*1 Silicone gasket \*1 Anti-skidding clip \*1 U steel plate \*1

## **Clasp Jumper**

Connects two pieces of lights together with a flexible cable. IP67 DIY connector. L available in 0.3m, 1m and 3m.

Silicone gasket\*2 U steel plate\*2 Anti-skidding clip\*2



47.5mm

Ľ

16.3mm

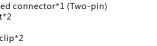
-21.5mm

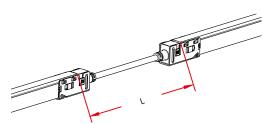
21.5mm





Double-end feed connector\*1 (Two-pin)



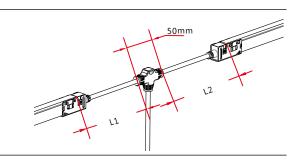




### **Clasp Power T-feed**

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

Tjoint\*1 (Two-pin) Silicone gasket\*2 U steel plate\*2 Anti-skidding clip\*2



# 3.4 Snap Connector











# **Snap Jumper**

Connects two pieces of lights together with a flexible cable. IP67 DIY connector. L available in 0.3m, 1m and 3m.

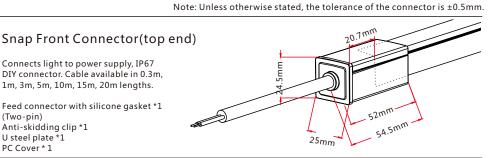
Double-end feed connector\*1 (Two-pin) Silicone gasket\*2 U steel plate\*2 Anti-skidding clip\*2 PC cover\*2



## 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.

Tjoint\*1 (Two-pin) Silicone gasket\*2 U steel plate\*2 Anti-skidding clip\*2 PC cover\*2



62mm

30mm

6

62mm

20.71

30mm

mm

24.5mm

24.5mm

### 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.

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

(Two-pin) Anti-skidding clip \*1

U steel plate \*1

PC Cover \* 1

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

### Snap Front Connector(bottom)

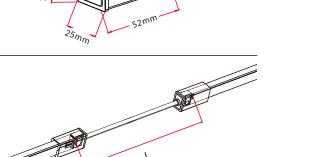
Connects light to power supply, IP67 DIY connector. Cable available in 0.3m, 1m, 3m, 5m, 10m, 15m, 20m lengths.

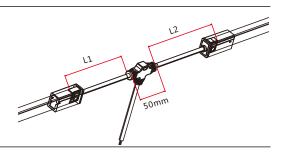
(Two-pin) Anti-skidding clip \*1 U steel plate \*1

# Snap End Cap

IP67 DIY connector.

Anti-skidding clip \*1 U steel plate \*1 PC Cover \* 1





# 24.5 mm

Feed connector with silicone gasket \*1

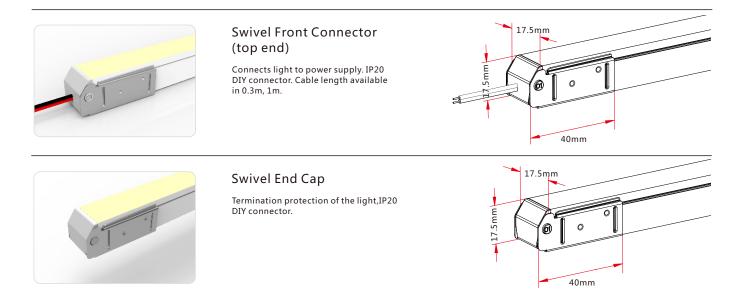
# PC Cover \* 1

Termination protection of the light,

Tail plug wite silicone gasket \*1

# **3.5 Swivel Connector**

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



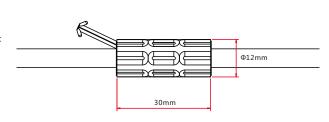
# 3.6 Anti-wicking Ferrule



# Anti-wicking Ferrule

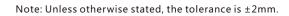
The anti-wicking ferrule is located at 115mm (±5mm tolerance) from the connector on the cable.

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



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

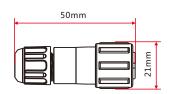
# 3.7 Male & Female Connector





### Male & female Connector

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

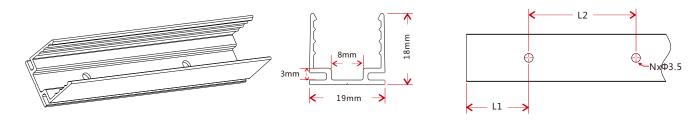


# 4. Mounting Profile

# 4.1 Standard Aluminum Profile



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

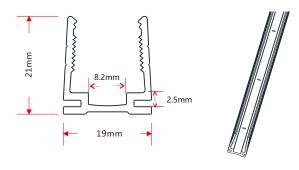


Model	W*H(mm)	Standard Length (mm)	L1 (mm)	L2 (mm)	Screw Hole (mm)	Hole Number	For Product
		35	17.5	/	Φ3.5	1	SQ
NE-SO-CH	19*18	500	50	200	Ф3.5	3	SQ
NE SQ CH	NE-SQ-CH 19*18	1000	100	200	Ф3.5	5	SQ
		2000	100	200	Ф3.5	10	SQ

# 4.2 Plastic Profile



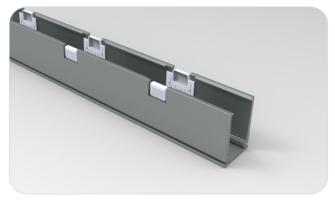
Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5$  mm.



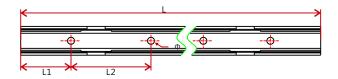


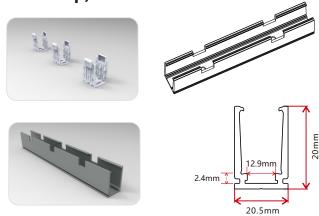
Model	W*H(mm)	Standard Length (mm)	L1 (mm)	L2 (mm)	Screw Hole (mm)	Hole Number	For Product
	10+21	500	50	200	Ф3.5	3	SQ
NE-SQ-CH	NE-SQ-CH 19*21	1000	100	200	Φ3.5	5	SQ
	-	2000	100	200	Ф3.5	10	SQ

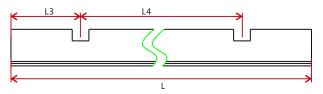
# 4.3 Self-locking Aluminum Profile (Using with the Clip)



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

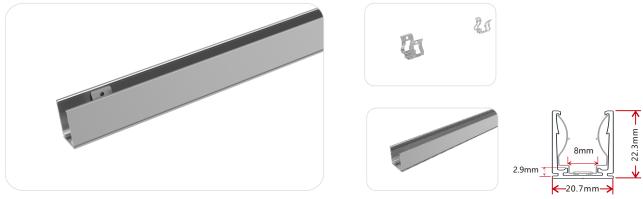




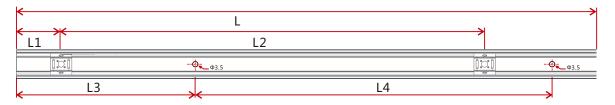


Model	W*H(mm)	Standard Length(mm)	L1(mm)	L2(mm)	L3(mm)	L4(mm)	Hole Screw(mm)	Hole Number	Clip Number
NE-SQ-CH 20.5*20	35	17.5	25	5	/	Ф3.5	2	1	
	500	50	200	75	350	Ф3.5	3	2	
	1000	100	200	150	350	Ф3.5	5	3	
		2000	100	200	125	350	Ф3.5	10	6

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



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



Model	W*H(mm)	Standard Length(mm)	L1(mm)	L2(mm)	L3(mm)	L4(mm)	Hole Screw(mm)	Hole Number	Clip Number
NE-SQ-CH 20.7*22.3	35	17.5	/	5	25	Φ3.5	2	1	
	20 7*22 2	500	25	150	50	200	Φ3.5	3	4
	1000	25	190	100	200	Ф3.5	5	6	
		2000	25	195	100	200	Ф3.5	10	11

# Net: 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 35 17.5 Φ3.5 SQ 1 / NE-SQ-CH 20.8\*23 500 50 200 Φ3.5 3 SQ 5 1000 100 200 Φ3.5 SQ 2000 SQ 100 200 Φ3.5 10

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

4.5 Plastic & Aluminum Combination Profile

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

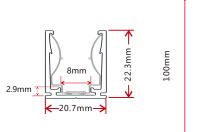


Model: NE-SQ-CH Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5$  mm.

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



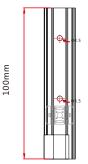
Model: NE-SQ-CH Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5$ mm.



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



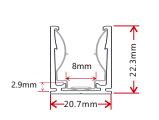




Model: NE-SQ-CH Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5$ mm.

# 4.6.4 Self-locking Aluminum Profile Ver. 2, Side Feed From Right (Using with the Clip)







Model: NE-SQ-CH Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5$ mm.

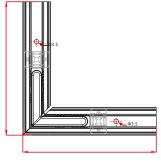
# 4.7 Corner Aluminum Profile (Applicable to Injection-moulded Connector Only)

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





100mm

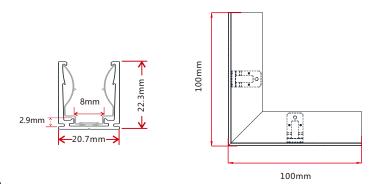


Model: NE-SQ-CH Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5$ mm.

100mm

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



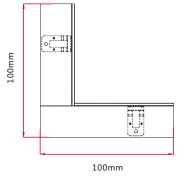


Model: NE-SQ-CH Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5$ mm.

# 4.7.3 Outward L Shape Self-locking Aluminum Profile Ver.2 (Using with the Clip)

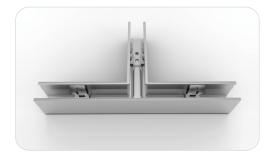




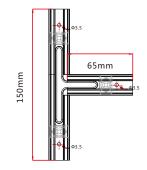


Model: NE-SQ-CH Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5 \text{mm}.$ 

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



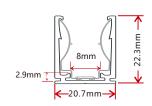


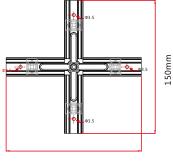


Model: NE-SQ-CH  $\label{eq:NE-SQ-CH}$  Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5 \text{mm}.$ 

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



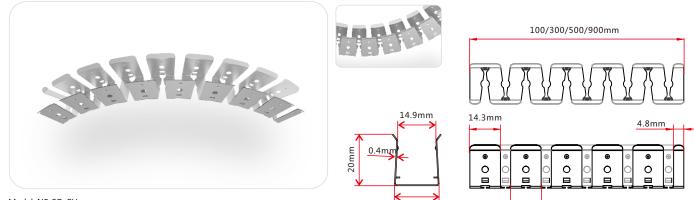




Model: NE-SQ-CH Note: Unless otherwise stated, the tolerance of the profile is ±0.5mm.



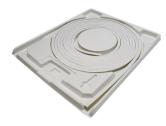
# 4.8 Curve Stainless Steel Profile



Model: NE-SQ-CH Note: Unless otherwise stated, the tolerance of the profile is  $\pm 0.5$  mm.

# 5.Packaging

# Packaging Method





White Box



17.5mm

14.3mm



Carton

# Packaging Detail

Plastic Plate

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

# 6.2 Certificate

Certificating Type	Testing Organization	Certificate Serial Number	Report Reference
UL 2108	UL	20160726-E360029	E360029-20130322
CE-EMC	SGS	SZEM1702001259LMV	SZEM160600421302

# 6.3 Third-Party Test Report

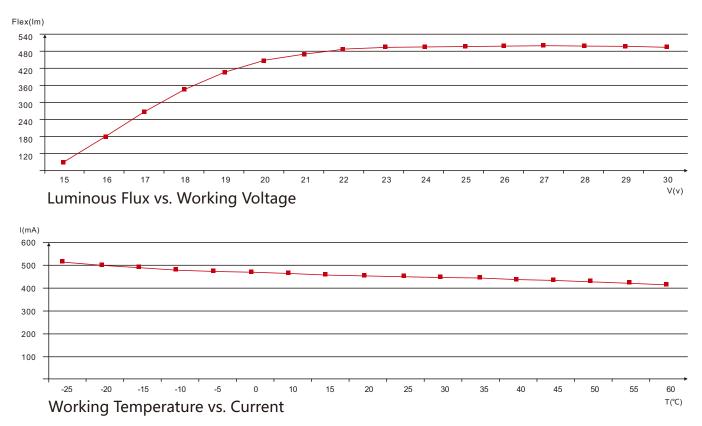
Testing Item	Testing Organization	Report Number
RoHS	SGS	CANEC1202163502 A01
IP68: Screw type	TUV SUD	68.140.12.136.02
IP68: Clasp type	SGS	GZES140200135301
		GZES140200135401
		GZES140200135501
		GZES140200135701
		GZES140200135801
IPX8: Molding type	SGS	SZES141200357301
		SZES141200357401
		SZES141200357501
IPX8: Snap type	SGS	GZES160600792031
Flame retardant	TUV SUD	68.140.13.068.01
UV@340nm: Light	AOV	A002R130308065—1R01
UV@340nm: PVC	AOV	A002R130308065—2R01

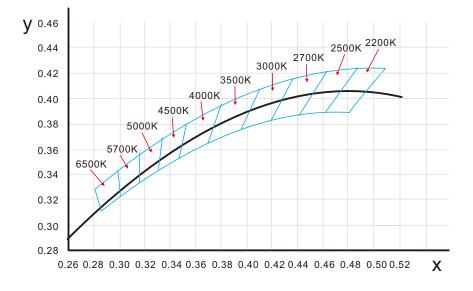
>>Note: The testing reports and certificates are available from the related official website.

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
	Twist Test	maximum connection length with both ends feed
		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°C-60°C (typical
		temperature range)
	Constant Temperature Test	Manufacturer-defined , 70°C (typical temperature)

# 6.4 Reliability Test of Light

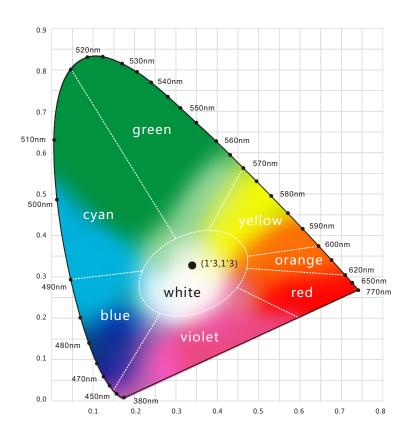
# **6.5 Figures of Typical Characteristics**

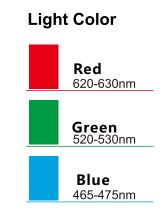




# 6.6 (X,Y) Chromaticity Diagram

# 6.7 Wavelength of Colour Light





# 6.8 Correlated Colour

# Temperature ANSI STANDARD

### Nominal CCT Categories

	5		
Nominal CCT	Target CCT and tolerance(K)	Target D <sub>uv</sub>	D <sub>uv</sub> 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)	$T_{F}^{(1)}\pm\Delta T^{(2)}$	$D_{\rm uv} T_{\rm F}^{\rm 3)}$	

### Remark:

- 1)  $T_{\rm F}$  is chosen to be at 100K steps (2300,2400,.....,6400K),excluding the ten nominal CCTs listed in Table 1.
- 2)  $\Delta T = 1.1900 \times 10^8 \times T^3$ -
  - 1.5434x10<sup>4</sup>xT<sup>2</sup>+0.7168xT-902.55
- 3) Same as in the  $\mathsf{D}_{\mathsf{uv}}$  Tolerance Range.

# 6.9 Loading Chart

Туре.	Rated Power /m	Power Supply											
		35w	60w	75w	80w	100w	120w	150w	120w	150w	185w	240w	320w
NE-SQ	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							DC input	01	<u>}</u>	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.