



surelight

NE-SL

USER MANUAL

PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE
INSTALLATION. LEAVE A COPY FOR THE END USER/MAINTENANCE
ENGINEER FOR FUTURE REFERENCE.



ARTIST OF LIGHT
LED NEON FLEX RIBBON



Version No. : V2.0

Table Of Contents

Unpacking	03
Basic Parameters	04
Cautions	05
Instructions for Cutting Light	06
Swivel Front Connector	08
Swivel End Cap	10
Diagram of Light Wiring	12
Mounting Profile Options	13
Troubleshooting	19
Limited Warranty	20
Appendix	21

Unpacking

White Box Packaging



1



2



3



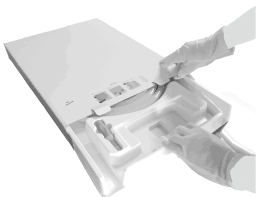
4



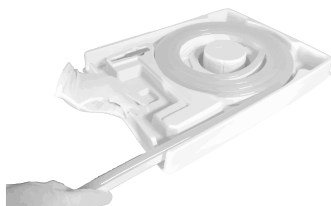
5



6



7

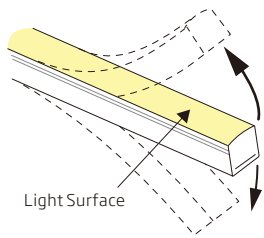


8



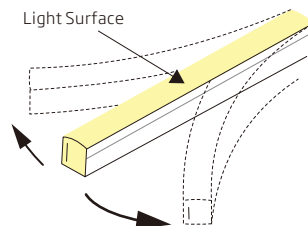
Basic Parameters

NE-SL-VB



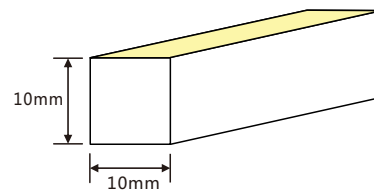
(VB) Vertical Bending

NE-SL-HB



(HB) Horizontal Bending

Above illustrations were printed on the side of light, identify the bending direction accordingly before installation.



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

1. Dimension: 10*10mm
2. Min. bend diameter: 100mm
3. Protection rate: IP65/IP40/IP20
4. The product IP rate is ultimately in line with properly applied IP rated connectors.
5. Easy to use with a range of accessories for joining, terminating, mounting and powering.
6. Long lifespan: 5 years.
7. Environmental working temperature: $-20^{\circ}\text{C} \sim 45^{\circ}\text{C}$
8. Environmental installation temperature: $0^{\circ}\text{C} \sim 45^{\circ}\text{C}$

Product Type: NE-SL

	Light Colour	Appearance of Cover ¹	LED Qty/mtr	Working Voltage	Rated Power/m	LED Spacing	Min.Cutting Length	Max.Running Length
B	R/G/B/A/W	WM	144LEDs	D24CV	4.5W	13.89mm	83.3mm(12LEDs)	10m for single end feed 20m for double ends feed

NOTE: Appearance of Cover¹

WM= White PVC Housing¹+Milky Light-emitting Surface²

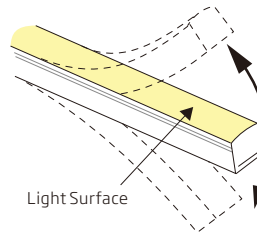
Note 1: Housing color is the light color except from the light-emitting surface.

Note 2: Light-emitting surface colour is the colour without light up.

Cautions

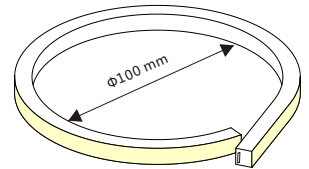
1. Before making any cuts, installation, maintenance or connection, be sure the mains is disconnected!
2. All connector joints must be connected correctly to achieve IP rating.
3. Please operate this flex light by instructions, and confirm the work voltage, it must be matched with product requirements.
4. Please confirm the polarity of connector before inserting front connector and energizing the mains power.
5. Connect and cut this light correctly. Any wrong operation will damage this light.
6. Using qualified DC power supply.
7. Please correctly use and bend this flex ribbon light, see the figures on the right.

NE-SL-VB



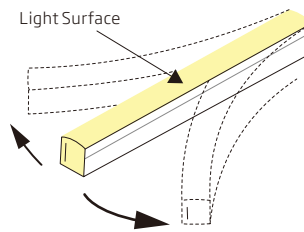
(VB) Vertical Bending

Bend the light according to above illustration (same printing mark on the side of light)



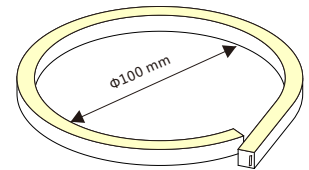
Do not bend smaller than allowed minimum bend diameter 100mm.

NE-SL-HB

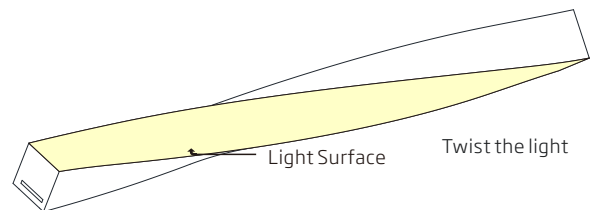


(HB) Horizontal Bending

Bend the light according to above illustration (same printing mark on the side of light)



Do not bend smaller than allowed minimum bend diameter 100mm.



WARNING: The above wrong approaches will damage the light.

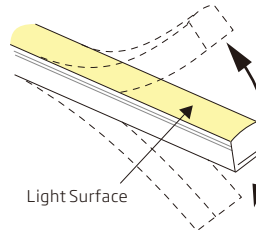


Instructions for light cutting (VB)

Note:

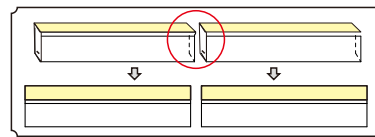
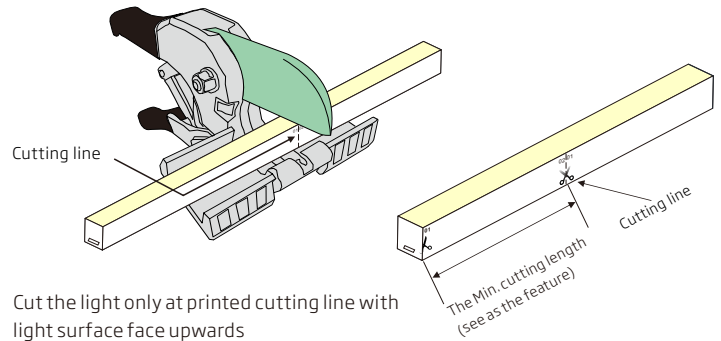
1. Place the light horizontally when cutting it.
2. Use only factory-recommended cutter.
3. Cut the light according to the following instructions. Incorrect operation will damage the light

NE-SL-VB

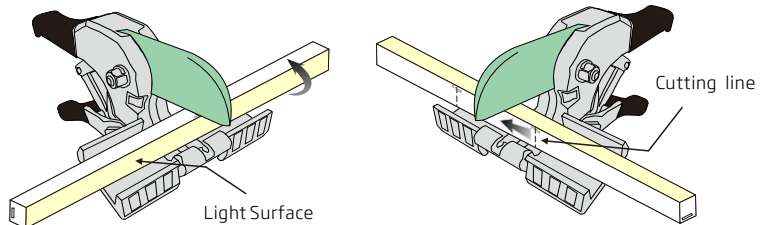


(VB) Vertical Bending

Follow below instructions to cut the vertical bending light, which can be identified by the above illustration printed on side of light

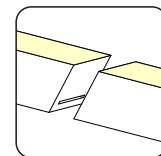
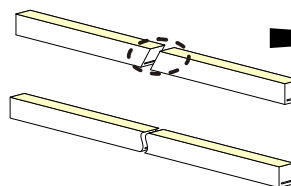


The cutting surface must be flush and smooth.



Lighting surface must be upwards

Cutting can only be made at the printed cutting line



Don't cut slantingly

WARNING: The above mishandling will damage the light.

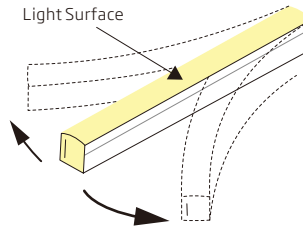


Instructions for light cutting (HB)

Note:

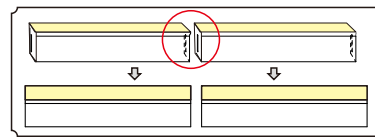
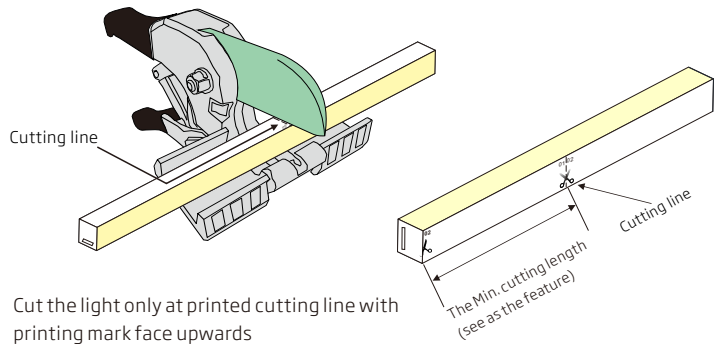
1. Place the light horizontally when cutting it.
2. Use only factory-recommended cutter.
3. Cut the light according to the following instructions. Incorrect operation will damage the light

NE-SL-HB

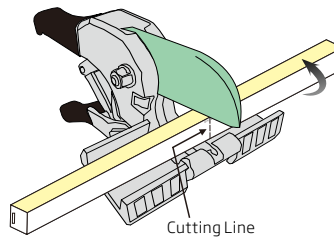


(HB)Horizontal Bending

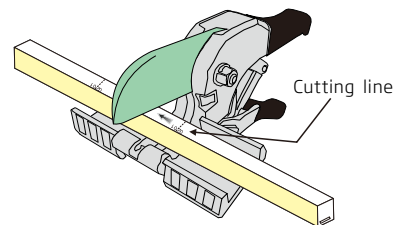
Follow below instructions to cut the vertical bending light, which can be identified by the above illustration printed on side of light



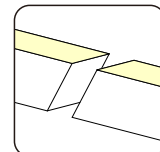
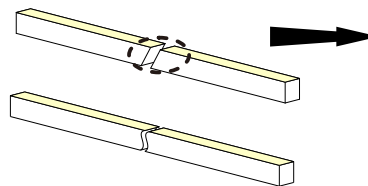
The cutting surface must be flush and smooth.



Printing mark should be faced upwards



Cutting can only be made at the printed cutting line



Don't cut slantingly

WARNING: The above mishandling will damage the light.



Swivel Front Connector

Please ignore these steps if the front connector has been assembled before delivery.

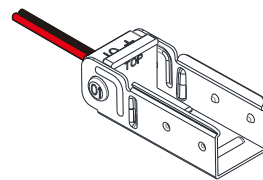
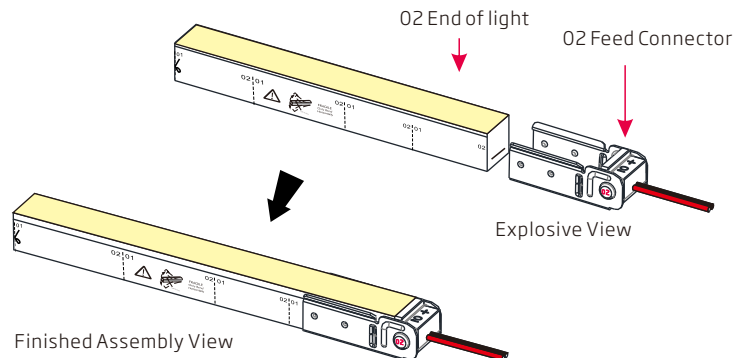
Note:

1. Never wet the assembly units or assemble with wet hands;
2. Please use the tools correctly;
3. Please pay attentions to personal security when using tools.
4. Failure to properly seal and assemble as instructed may void warranty.

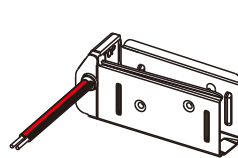
1.Components of Front Connector

Note:

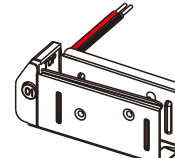
The light ends are marked with either an O1 or an O2. Always make sure to use an identically labeled connector for the appropriate direction.



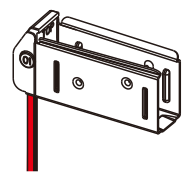
Feed Connector-top end (1pc)
[U Steel Plate (1pc)]



Feed Connector-side right (1pc)
[U Steel Plate (1pc)]



Feed Connector-side left (1pc)
[U Steel Plate (1pc)]



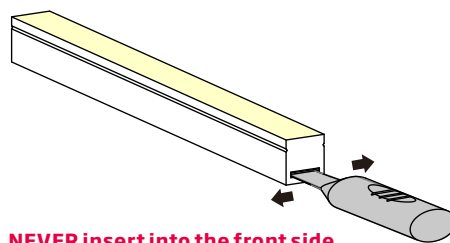
Feed Connector-bottom (1pc)
[U Steel Plate (1pc)]

2.Installation Steps

Note:

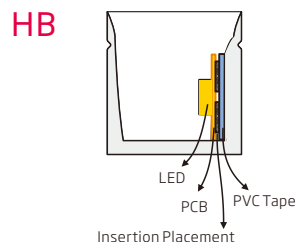
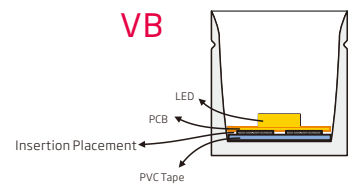
Installation steps are the same for Vertical Bending version and Horizontal Bending version, even though the PCB locations are different.

2.1 Inducing a Cavity for Feed Connector



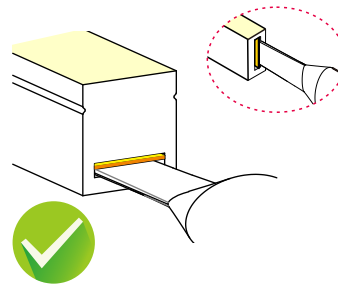
NEVER insert into the front side (LED side) of the PCB

Insert the inducer to the backside of PCB around 10~12mm, move the inducer right and left 3~5 times gently to create a small cavity.

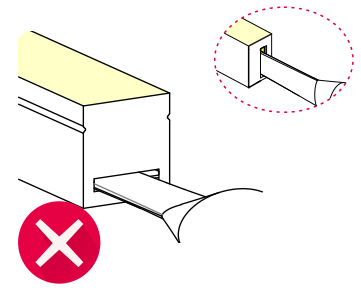


2.2 Inserting the Feed Connector

Rotate the feed connector pin to make its orientation vertical and insert it into the backside of PCB tightly.

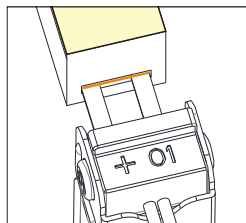


Insert the inducer into the backside of PCB



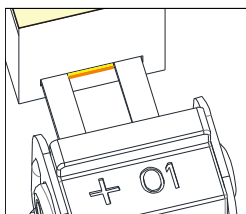
It will damage the light if insert into front side of PCB

NE-SL-VB

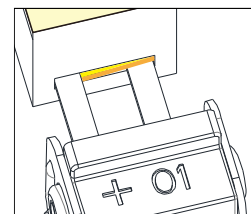


Insert the feed connector pins into the cavity that you created with the inducer (backside of PCB)

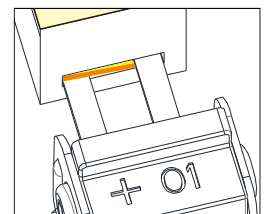
The following operations are prohibited:



Insert into the front side of the PCB

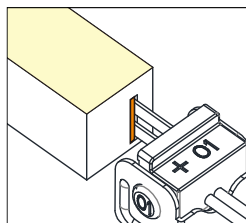


Insert crosswise into the PCB



Insert crosswise into the PCB

NE-SL-HB

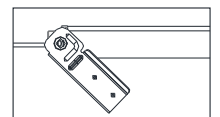
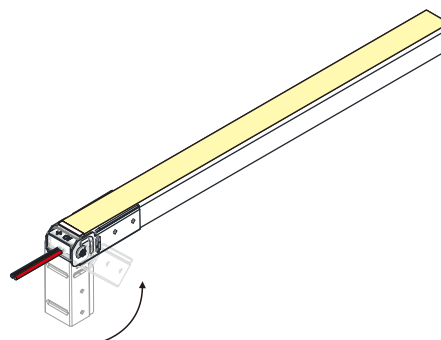


Insert the feed connector pins into the cavity that you created with the inducer (backside of PCB)

Make sure the insert to the backside of PCB, refer to the illustrations on top of this page to avoid any wrong inserts

2.3 Rotate back till the light seat into the steel plate tightly

Apply power to test light after assembly

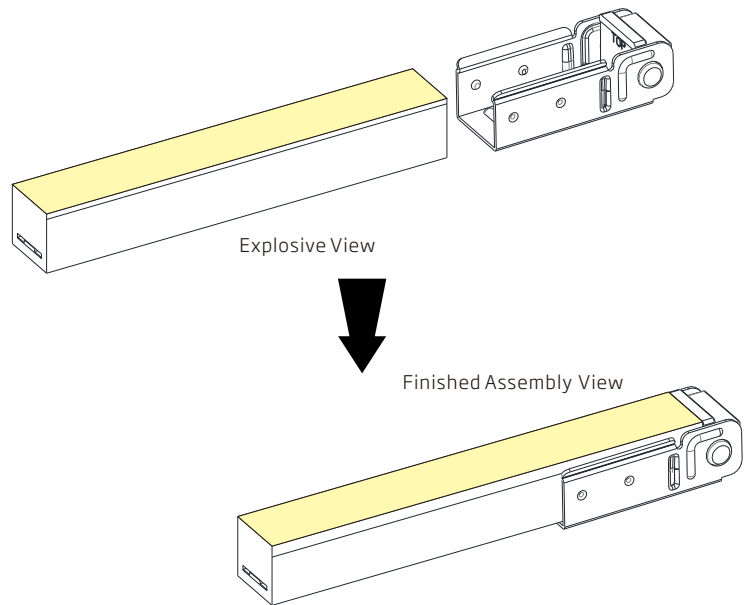


Swivel End Cap

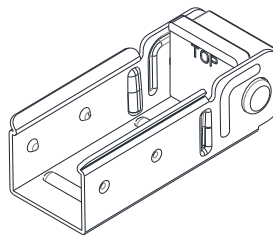
Please ignore these steps if the end cap has been assembled before delivery.

Note:

1. Never wet the assembly units or assemble with wet hands;
2. Please use the tools correctly;
3. Please pay attentions to personal security when using tools.
4. Failure to properly seal and assemble as instructed may void warranty.



1. Components of End Cap



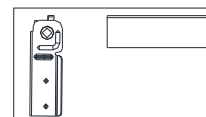
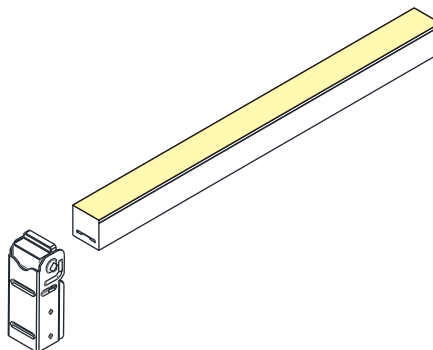
Tail Plug (1pc)
[U Steel Plate (1pc)]

2. Installation Steps

Note:

Installation steps are the same for Vertical Bending version and Horizontal Bending version, even though the PCB locations are different.

2.1 Rotate the end cap clockwise by 90 degrees.



2.2 Installation of Tail Plug

Put the light end and end cap together and rotate it to seat into the steel plate horizontally. Slide the light to the end cap and make sure they are attached tightly.

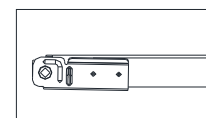
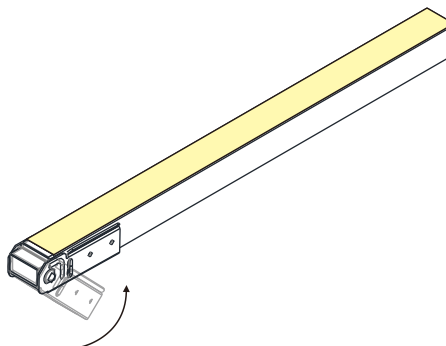
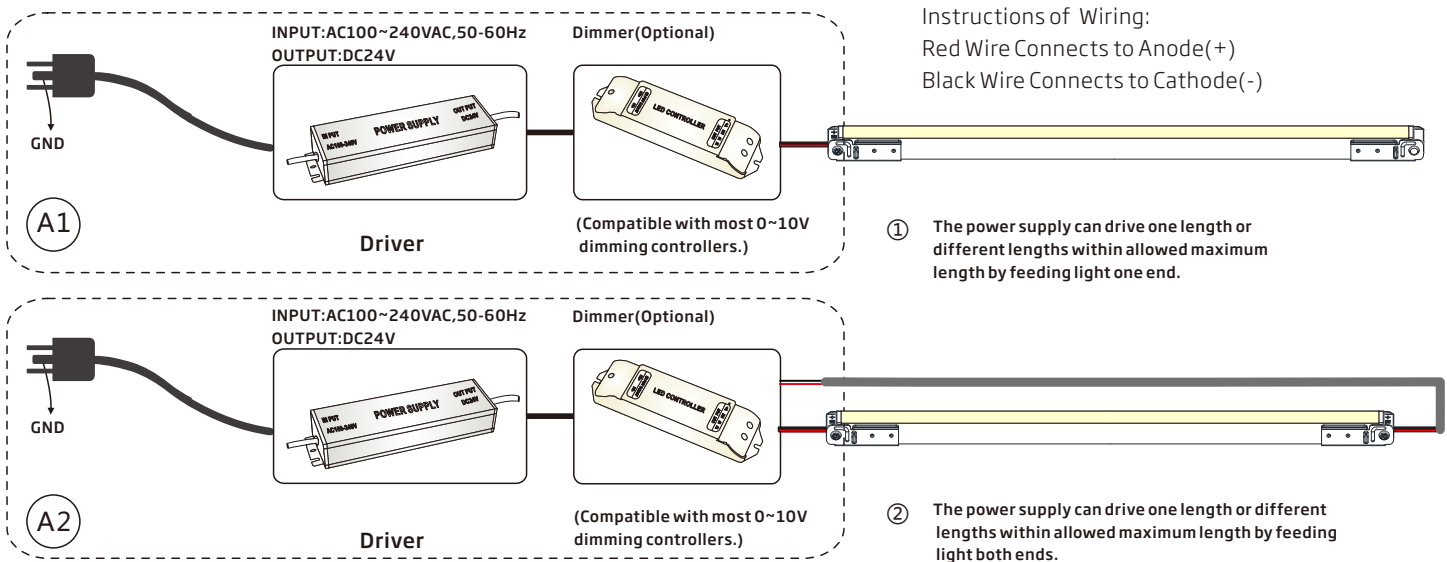


Diagram of Light Wiring

1. Monochrome Light Wiring

Note:

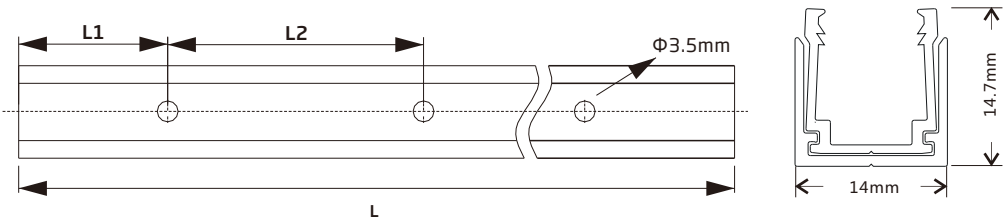
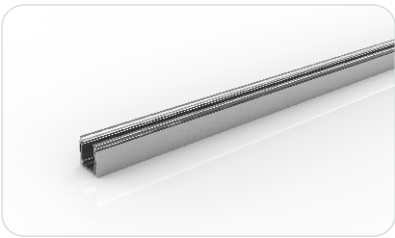
- 1.This LED Neon Flex Ribbon must be used in conjunction with DC24V power supply.
- 2.Always observe proper polarity.
- 3.Ensure to add 20% buffer when sizing power supply.
- 4.Ensure that the power cable carried current is no greater than 80% of its capacity.
- 5.To minimize the voltage drop and keep light consistency, position power supply nearest to the power feed end of LED Neon Flex Ribbon and keep the power line as short as possible.



Max.Continuous Length	Article No.	Single End Feed White	Double Ends Feed White
	NE-SL-CV	10m	20m

Mounting Profile Options

1. Plastic & Aluminum Combination Profile



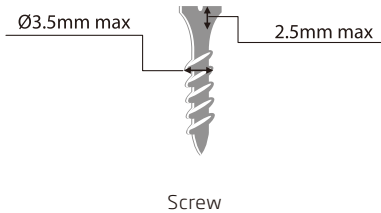
Note: Unless otherwise stated, the tolerance of the profile is ±0.5mm.

Dimensions:

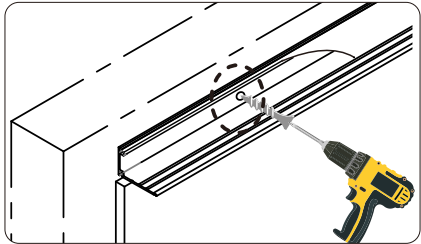
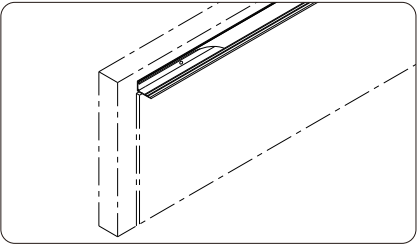
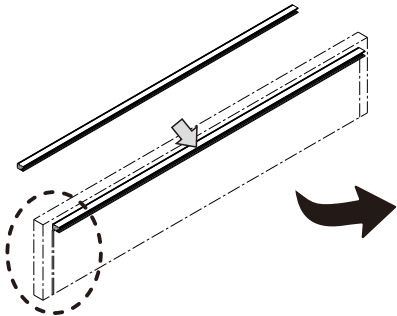
Model	W*H(mm)	Length(mm)	L1(mm)	L2(mm)	Screw Hole(mm)	Hole Number	For Product
NE-SL-CH	14*14.7	35	17.5	/	Φ3.5	1	SL
		500	50	200	Φ3.5	3	SL
		1000	100	200	Φ3.5	5	SL
		2000	100	200	Φ3.5	10	SL

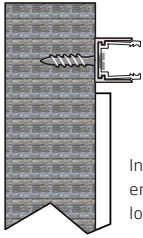
2. Installation Guide

2.1 Prepare for Installation

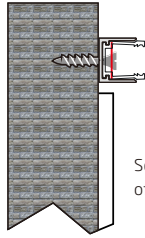


2.2 Correct Installation of Standard Aluminum Profile

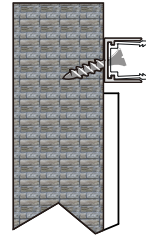




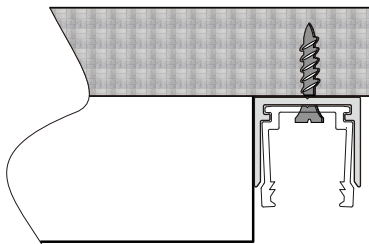
Install the screw into position and ensure the screw head is flush or lower the base of aluminum profile.



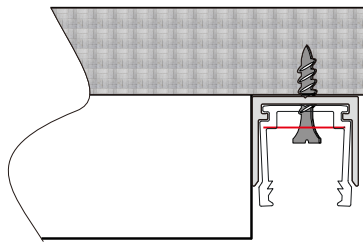
Screw head above the base of aluminum profile.



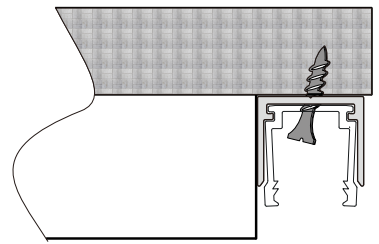
Gradient installing of screw.



Install the screw into position and ensure the screw head is flush or lower the base of aluminum profile.



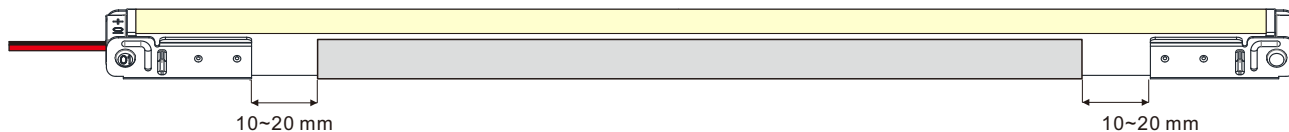
Screw head above to the base of aluminum profile.



Gradient installing of screw.

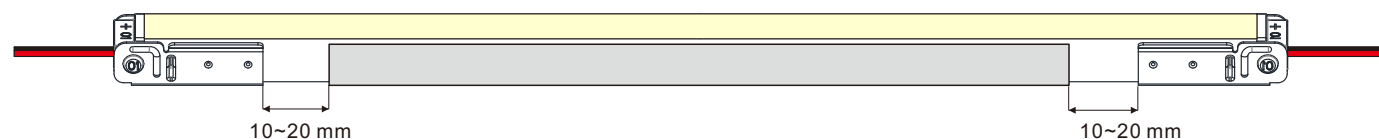
3. Requirements and Cautions for Installation of Mounting Profile

3.1 For Light with Swivel Connector Fittings



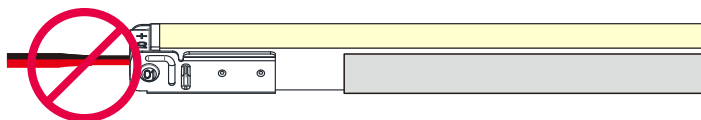
Ensure the supply cord is not subject to mechanical stress.

Keep 10-20mm distance between the end of aluminum profile and that of aluminum mounting piece.



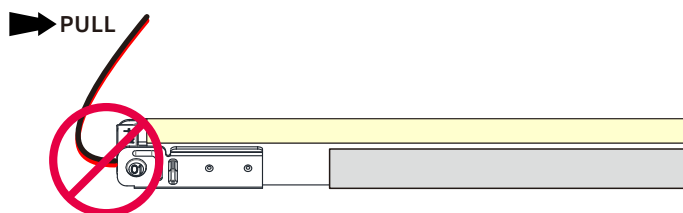
Mechanical stress on front connector cable shall be avoided.

PULL

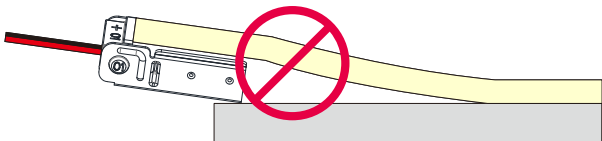


It is forbidden to curl or pull the front connector cable with excessive force.

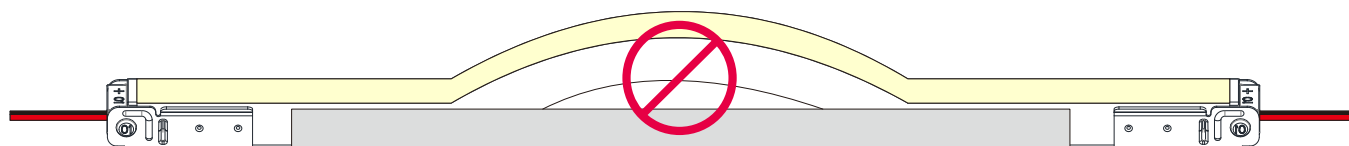
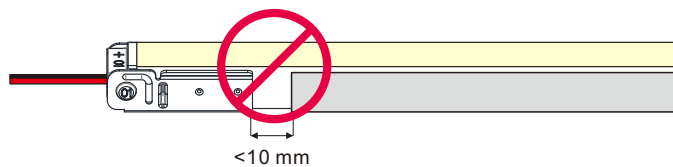
PULL



It is forbidden to let any connector aluminum mounting piece on the aluminum profile and make light deformation.



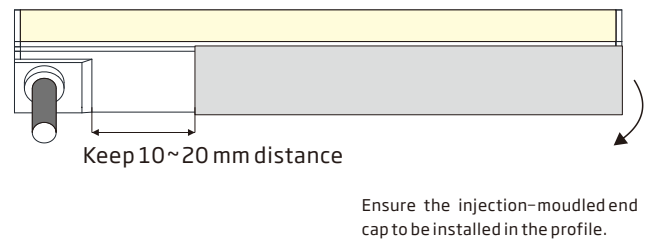
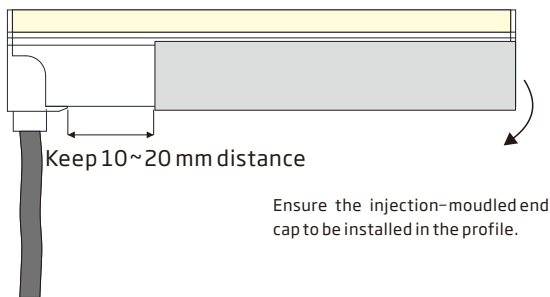
The space between aluminum profile and aluminum mounting piece less than 10mm is forbidden.



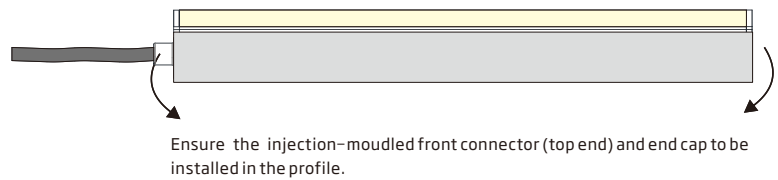
Install light in one direction. Don't let it choke in middle.



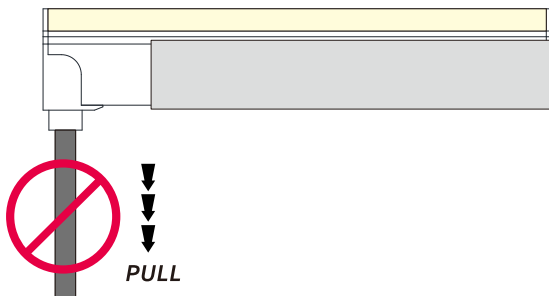
3.2 For Light with Injection-moulded Connector Fittings



Ensure the power cable is not subject to mechanical stress at the beginning.

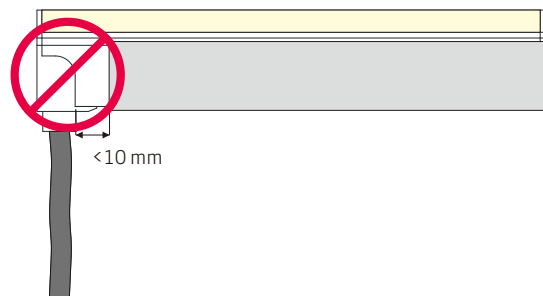


Mechanical stress on front connector cable shall be avoided.

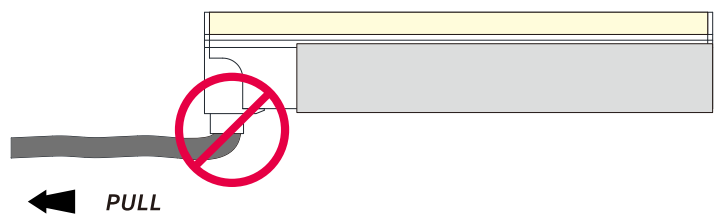
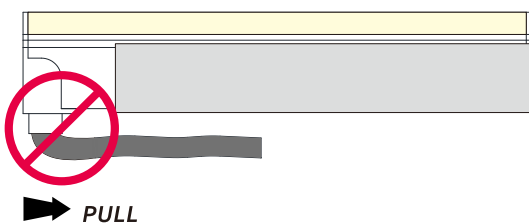


It is forbidden to curl or pull the front connector cable with excessive force.

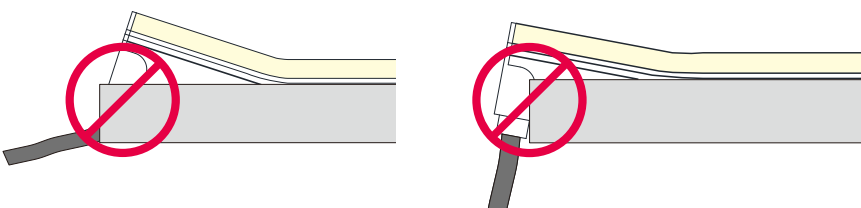
The space between connector and mounting profile less than 10mm is forbidden.



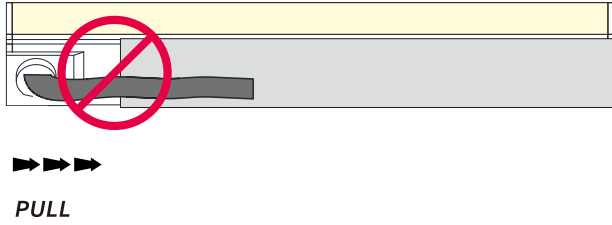
It is forbidden to curl or pull the front connector cable with excessive force.



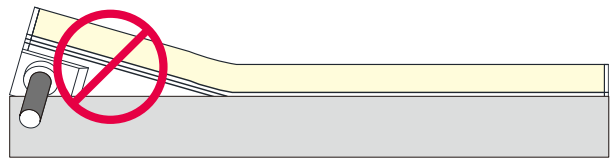
It is forbidden to force the injection-moulded end to fit into the mounting profile and make light deformation.



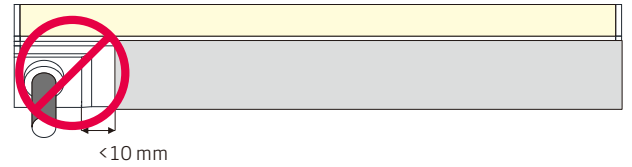
It is forbidden to curl or pull the front connector cable with excessive force.



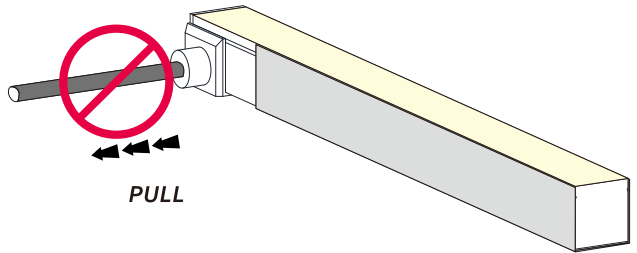
It is forbidden to force the injection-moulded end to fit into the mounting profile and make light deformation.



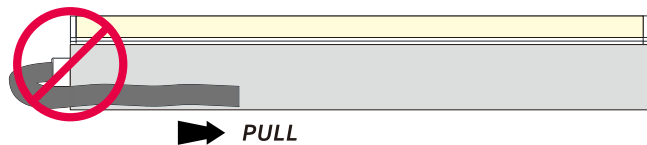
The space between connector and mounting profile less than 10mm is forbidden.



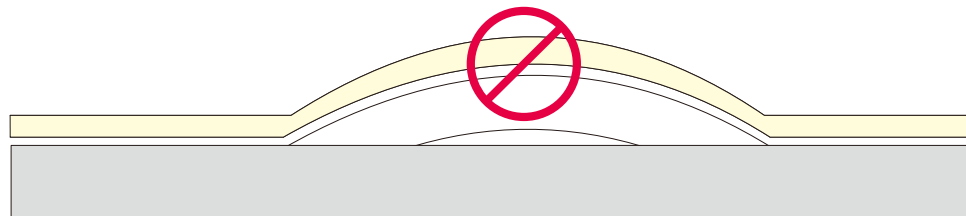
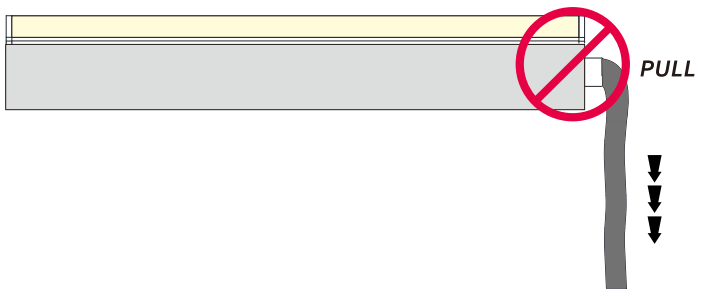
Mechanical stress on front connector cable shall be avoided.



It is forbidden to curl or pull the front connector cable with excessive force.



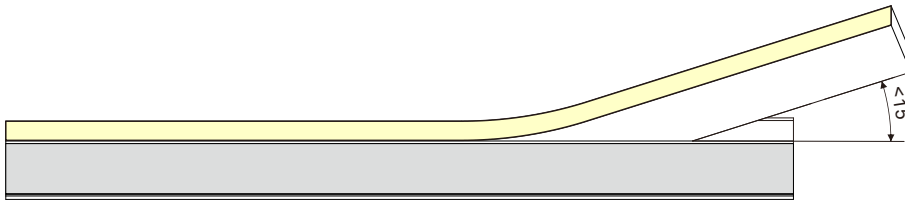
Mechanical stress on front connector cable shall be avoided.



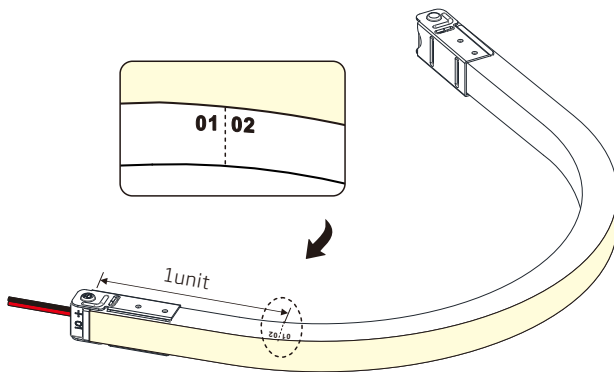
Install the light in one direction, no matter what kind of connector used . Don't let it choke in middle.



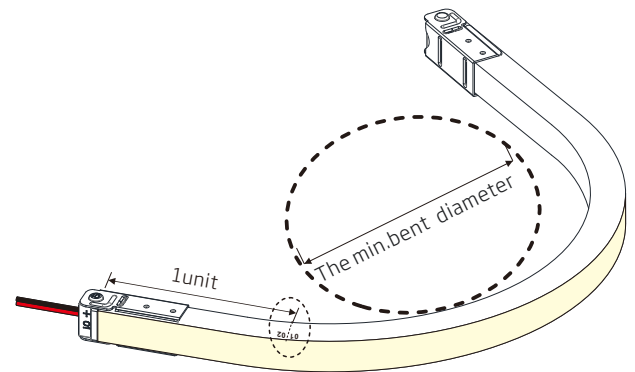
3.3 Bending in the Process of Installation



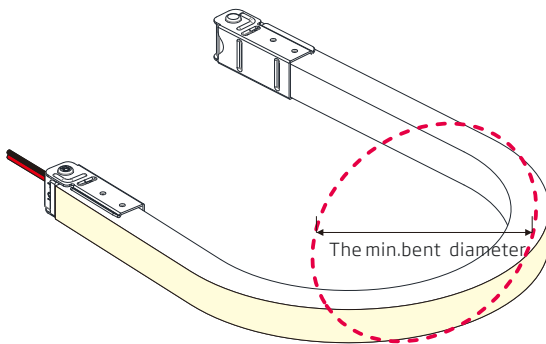
Installing angle should be less than 15 degree when pressing the light to the aluminum profile by hand.



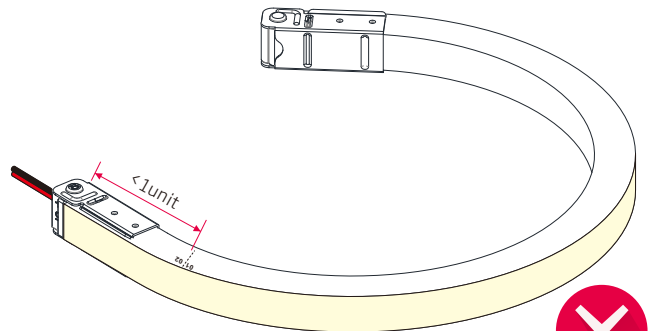
Please avoid bending at the first unit of the light.



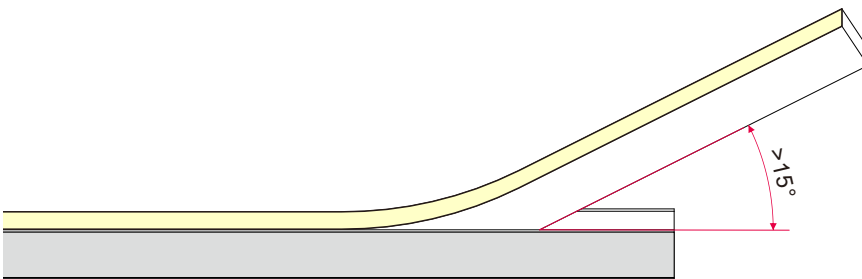
The light can bend in defined min. bending diameter or larger.



The circuit board and LEDs could be damaged if bending diameter is tighter than defined min. bending diameter.



Do not bend against the first or last unit of the light.



The circuit board could be damaged if installing angle larger than 15 degree.

Troubleshooting

The whole light doesn't work.

- Check power supply is plugged in, switched on and receiving power.
- Check all light, dimmer or controller connections from the power supply to LED Neon Flex Ribbon.
- Check polarity of all wire connections.
- Make sure power supply output voltage is 24V DC.
- Check front connector is inserted into backside of PCB and properly assembled.

Light emitting appear dim or dull at one end.

- Check whether the output voltage of the power supply is lower than that of light.
- Adjust the dimming level to the maximum.
- Power from both ends or shorten lighting length to prevent voltage drop.

Light emitting appear excessive brightness.

- Check whether the output voltage of power supply is higher than that of light.
- Check whether the power grid is stable.

If the first segment doesn't work.

- Cut not in indicated cutting line or not in a straight line. Cut out and remove the first segment.
- Damage caused to the first LED when inserting the front connector to the right side of PCB. Cut out the first segment and properly assemble connector.
- Water ingress due to poor connector assembly could cause a short circuit of first segment. Replace the light with a new one.
- External impact damage inside LEDs. Only use your hands to install LED Neon Flex Ribbon into aluminum profile.

LED Neon Flex Ribbon is flashing on and off.

- Check the power supply to ensure it supports the length you are using. Select the appropriate strength or install an additional power supply to support your installation.
- Check power supply output voltage is stable.
- Check front connector is properly installed with good contact with the copper PCB.
- Check proper controller is connected for light working.

Limited Warranty

Surelight Ltd hereby warrants, to the original purchaser, Surelight Ltd finished products to be free of manufacturing defects in material and workmanship for a standard period of 3 Years unless otherwise stated from the date of purchase, with an extended warranty available upon request. This warranty shall be valid only if the product is purchased from Surelight Ltd. During the warranty period, you are entitled to have the products repaired or replaced if the products fail to be of acceptable quality and damage under normal use. It is the owner's responsibility to establish the date and warranty terms by acceptable evidence, at the time service is sought.

Warranty is applied by the Surelight Ltd in England. Surelight Ltd retains the right to review the justification of the claim. The limited warranty is subjected to the following additional conditions:

- a. The product is properly handled, installed and maintained according to official latest instructions or manual of Surelight Ltd and applicable regulations and standards.
- b. Purchaser must notify Surelight Ltd in writing of 8D CORRECTIVE ACTION REPORT to specially state the defect in question no later than 15 days after they were detected. Acceptance of the product shall not be denied on the grounds of insignificant defects. Claims for defects notified belatedly are excluded.
- c. A copy of the purchase invoice of the concerned products must be attached to submit to Surelight Ltd.
- d. The concerned products sample shall be returned back as required quantity to Surelight Ltd for inspection upon request, and sent to the following address:

Surelight Ltd
Unit 37
Venture One Business Park
Long Acre Close
Holbrook Industrial Estate
Sheffield
S20 3FR

This is not a service contract, and this warranty does not include maintenance, cleaning or periodic check-up. Parts not covered by this warranty include: fuses, external power supplies, third party items not manufactured by Surelight Ltd. During the period specified above, if any product covered by this limited warranty, Surelight Ltd determines to its satisfaction that such product failed to satisfy this warranty, Surelight Ltd will, at its own discretion, repair or replace the product or the defective part thereof. For purpose of clarify, "repair or replace the product or the defective part thereof" does not include any removal or reinstallation costs or expenses, including, without limitation, any labor costs or expense, shipping costs to return non-confirming products or any damages that may occur during the return of product to Surelight Ltd. A refund will not be provided for any warranty claim, but the purchaser may, at its discretion, require deducting the original purchase price of defective product or part from future purchase orders.

If Surelight Ltd chooses to replace the product and is not able to do so because it has been discontinued or is not available, Surelight Ltd may replace it with a comparable product. Surelight Ltd reserves the right to use new, reconditioned, refurbished, repaired, or remanufactured products or parts in the repair or replacement of any product covered by this limited warranty. All products covered by this warranty were manufactured after January 1, 2012, and bear identifying code to that effect.

Surelight Ltd reserves the right to make changes in design and/or improvements upon its products and accessories without any obligation to include these changes in any products theretofore manufactured.

Exclusion of Warranty:

- a. Warranty period has expired.
- b. Legal proof-of-purchase invoice or PO numbers are not provided, or are reasonably believed to have been forged or tampered with.
- c. Damage caused by improper installation, wiring, storage, transportation, incorrect use, bending or operation not in accordance with the official latest instructions or manual.
- d. Damage caused by unauthorized modification, dissection, soldering, or any deliberate damage or losses.
- e. Damaged caused by the carrier in-transit, which will be handled under separate terms (Purchaser's designated consignee is responsible for all eight claims; Surelight Ltd will be available to assist in such matters if proving forward service).
- f. Accessories or attachments to the product that are not supplied or approved by Surelight Ltd and led to the damage.
- g. The product is not used for the purpose for which designed or if any repairs, alterations or maintenances are made by any person not authorized by Surelight Ltd.
- h. Product silk printed serial numbers, crimped waterproof ring show signs of tampering or removal.
- i. Conditions demonstrating misapplication, under/over voltage situations, extreme environmental conditions beyond those defined in the product specification.
- j. Abrasions and natural appearance variations (i.e. dusty, fouling, etc.) that do not affect the function of the product.
- k. Direct or indirect losses caused by force majeure (i.e. vandalism, natural disaster, warfare, acts of terrorism, riots, fire, explosion, etc.).

Freight

Transportation cost for return product will be carriage paid (at the cost of the claimant). If the product was found to be defective after inspection, Surelight Ltd will reimburse the freight cost by deducting it from future order and bear the cost of replacement or repaired product delivery (Surelight Ltd will, at its own discretion, select the shipping way); if the product was found not to be defective or exclusion of warranty, the claimant shall bear all the return expenditures and need to re-purchase the product if requires replacement.

This warranty is the only written warranty applicable to Surelight Ltd Products and supersedes all prior warranties and written descriptions of warranty terms and conditions heretofore published.

Appendix

1. Correlated Color Temperature (CCT)

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	$D_{uv}(Tx) \pm 0.0060$
4000K	3985±275	0.0010	where
4500K	4503±243	0.0015	$D_{uv}(Tx) = 57700 \times (1/Tx)^2$
5000K	5029±283	0.0020	$-44.6 \times (1/Tx)$
5700K	5667±355	0.0025	+0.00854
6500K	6532±510	0.0031	

Flexible CCT (2200-6500K)	$T_F^{1)} \pm \Delta T^{2)}$	$D_{uv} T_F^{3)}$
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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.

2. Chart of Recommended Feed Cable Length According to Power Consumption



This chart only applicable to input voltage of 24V DC

WattS of Light	22AWG/0.34mm ²	20AWG/0.53mm ²	18AWG/0.82mm ²	17AWG/1.04mm ²	16AWG/1.38mm ²	14AWG/2.07mm ²	12AWG/3.29mm ²	10AWG/5.62mm ²
10W	36m	60m	100m	120m	140m	240m	400m	600m
20W	18m	30m	50m	60m	70m	120m	200m	300m
30W	12m	20m	30m	38m	45m	80m	130m	200m
40W	8m	15m	22m	28m	35m	60m	95m	140m
50W	6m	12m	18m	22m	28m	48m	75m	105m
60W	5m	10m	15m	18m	22m	36m	60m	88m
70W	/	8m	12m	14m	18m	30m	50m	72m
80W	/	6m	10m	11m	14m	24m	40m	58m
90W	/	4m	7m	8m	10m	18m	30m	45m
100W	/	/	5m	6m	7m	12m	22m	32m
110W	/	/	3m	4m	5m	8m	15m	22m
120W	/	/	2m	2.5m	3m	0m	8m	12m

Note:

1. Please adhere to parameters in below chart, feed cable length longer than what specified here will create voltage drop and eventually affect the lumen output of light.
2. The 0.3m feed cable length attached to front connector is not included in this chart.
3. Feed cable length over 10m is NOT recommended unless special circumstances, especially for pixel addressable lights.

3. Loading Chart

Type.	Rated Power /m	Power Supply							
		35W	60W	75W	80W	100W	120W		
F23	4.5W	6m	10m	12m	13m	16m	19m		
Energizing Way		<div>DC input  01/02</div>				<div>DC input  DC input</div>			

Note : 1. These are the light maximum recommended running length subject to selected power supply.
2. For example: it is recommended to use one 60W power supply loading maximum 10m light by energizing one end.