Features

- 48mm x 5mm x 1.6mm SMD LED
- High efficiency linear light emission
- Suitable energy efficient replacement for most incandescent, halogen, and fluorescent lamps
- Solid state light source with long and reliable operating life
- Standard Package: 50pcs / Tray
- RoHS Compliant

Applications

Entertainment and accent lighting

Architectural lighting

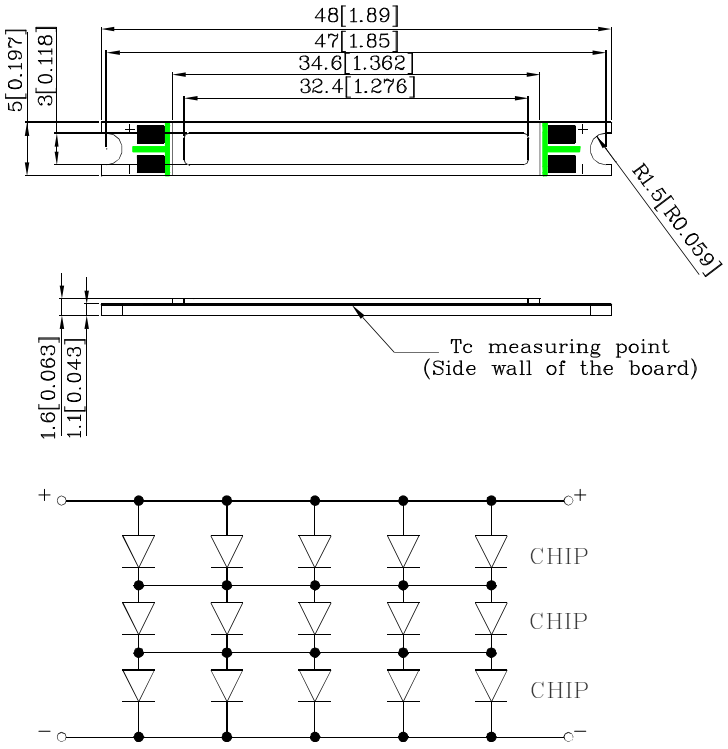
Industrial equipment

Commercial lighting

Specialty lighting (Markers, Beacon, Pathway)

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Package Schematics

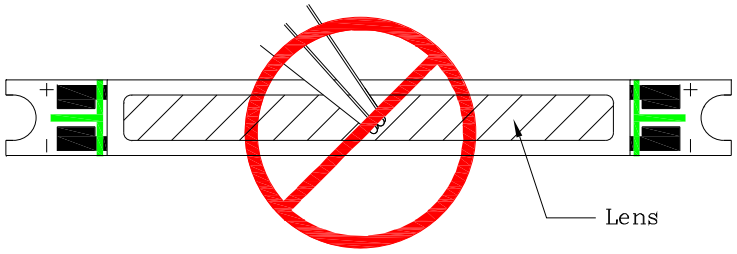


Notes:

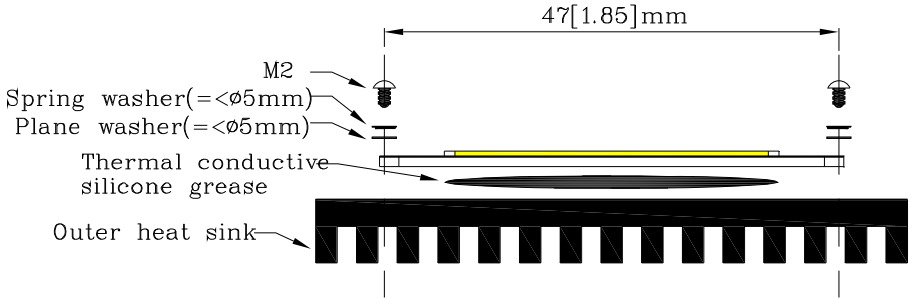
1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25(0.01") unless otherwise noted.
3. Specifications are subject to change without notice.

Precautions

1. Do not touch the lens with any sharp object.
2. No stress should be applied on the lens.



3. Thermal grease between the light bar and heat sink is recommended to fill air gaps for better thermal conductivity.
4. For securing the LED light bar , M2 screws are recommended. The light bar should not be bent or stressed in any way which could damage the internal circuit.



5. To prevent damages caused by electrostatic discharge (ESD), it is recommended to wear proper gear such as wristband or anti-static gloves when handling the product.
6. Constant current source is recommended to power the light bar . When more than one light bar are used, they should be connected in series if possible.
7. Thermal management should be taken into consideration when using the product. Maximum driving current should be reduced accordingly at higher ambient temperature to prevent overheating.
8. Soldering recommendations:
   - Soldering iron power should not exceed 40W, and should not be in contact with the joint for more than 3.5 secs.
   - The maximum soldering temperature should be less than 350°C.
   - Do not touch the product immediately after soldering.
   - Not reflow compatible.
9. As silicone encapsulation is permeable to gases, some corrosive substances such as H_2S might corrode silver plating of leadframe. Special care should be taken if an LED with silicone encapsulation is to be used near such substances.

Absolute Maximum Ratings

Parameter	Symbol	Rating	Units
Forward Current	I_F	700	mA
Forward Pulse Current [1]	I_{FP}	1000	mA
Power Dissipation	P_d	8.12	W
LED Junction Temperature	T_j	120	°C
Operating Temperature	Topr	-30~+100	°C
Storage Temperature	Tstg	-40~+120	°C
Case Temperature	T_c	100	°C

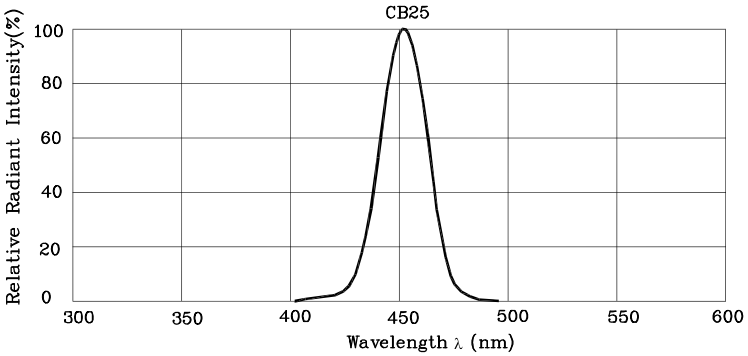
Note:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.

Electrical / Optical Characteristics

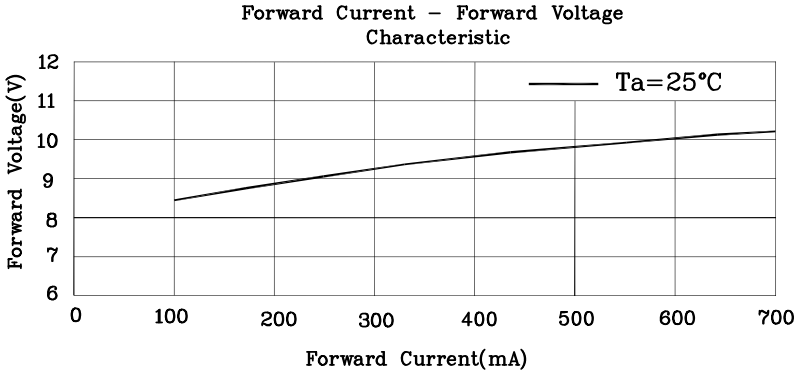
Part Name	Device	Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
XZCB25X112S7W-A	Blue	Forward Voltage [2]	V_F	8.4	10.3	11.6	V	I_F=700mA
		Luminous Flux CIE127-2007*[3]	Φv	29*	41.7*	-	lm	I_F=700mA
		Wavelength at peak emission CIE127-2007*[4]	λpeak	-	452*	-	nm	I_F=700mA
		Dominant Wavelength CIE127-2007*	λdom	-	460*	-	nm	I_F=700mA
		Spectral bandwidth at 50%ΦREL MAX	Δλ1/2	-	20	-	nm	I_F=700mA
		Temperature coefficient of λpeak	TCλpeak	-	0.12	-	nm/°C	I_F=700mA
		Temperature coefficient of λdom	TCλdom	-	0.10	-	nm/°C	I_F=700mA
		Temperature coefficient of Forward Voltage	$\Delta\lambda V_F/\Delta T$	-	-2.9	-	mV/°C	I_F=700mA
		Thermal Resistance	$R_{th\ j\text{-}c}$	-	3.5	-	°C/W	I_F=700mA
		Emission Angle	2 θ 1/2 x direction	-	120	-	°	I_F=700mA
			2 θ 1/2 y direction	-	120	-	°	I_F=700mA

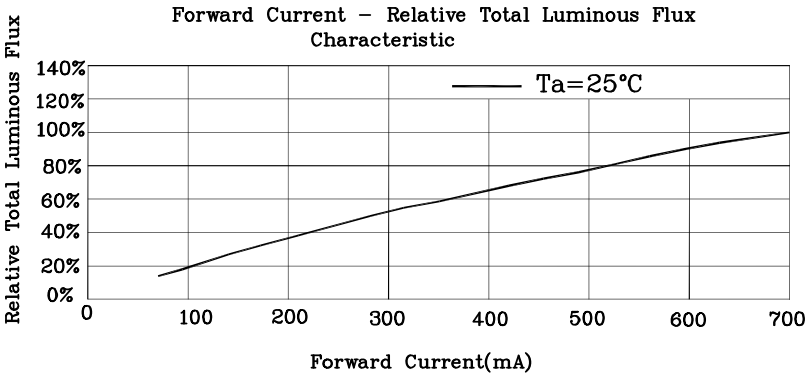
Notes:
2. Forward Voltage is measured with an accuracy of +/-0.1V.
3. Flux is measured with an accuracy of +/-15%.
4. Wavelength :+/-0.1nm.
*Luminous Flux value and wavelength are in accordance with CIE127-2007 standards.

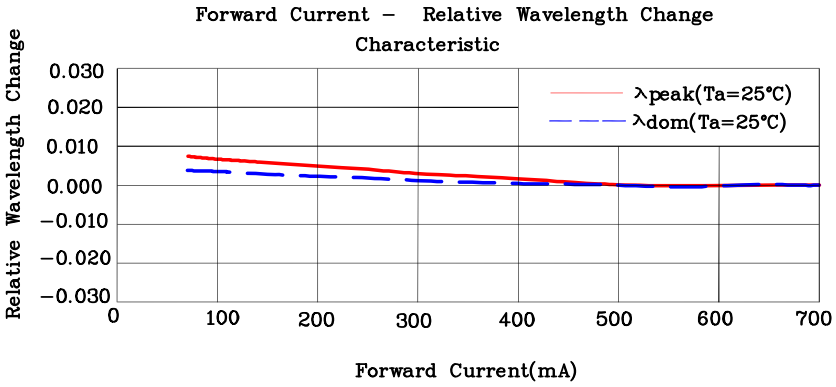
Test Item	Test Condition
Moisture-proof Test	85°C , 85%RH for 1000 hours

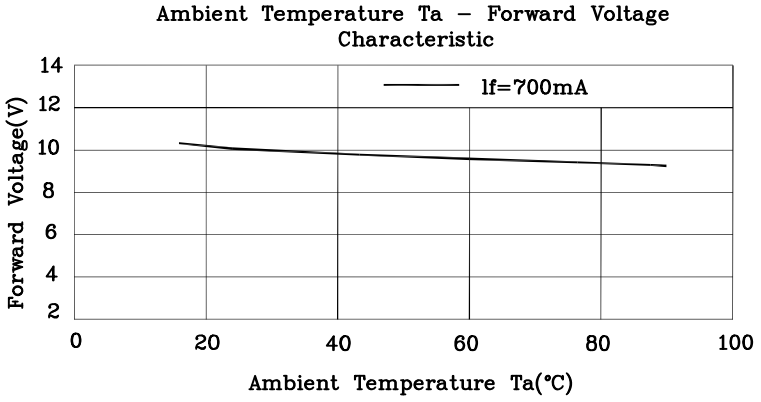


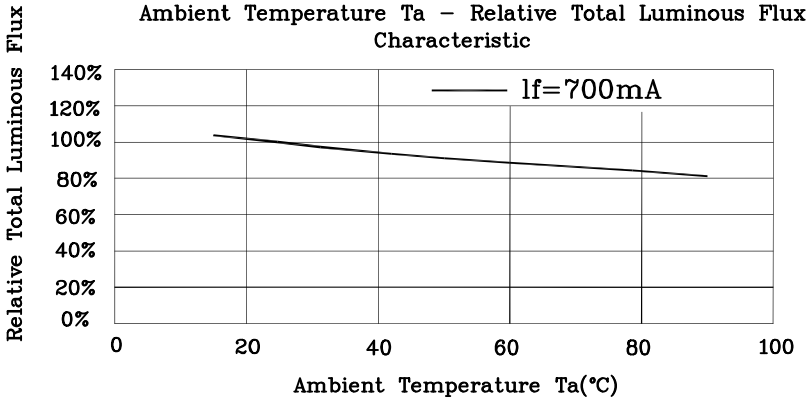
RELATIVE INTENSITY VS. CIE WAVELENGTH.

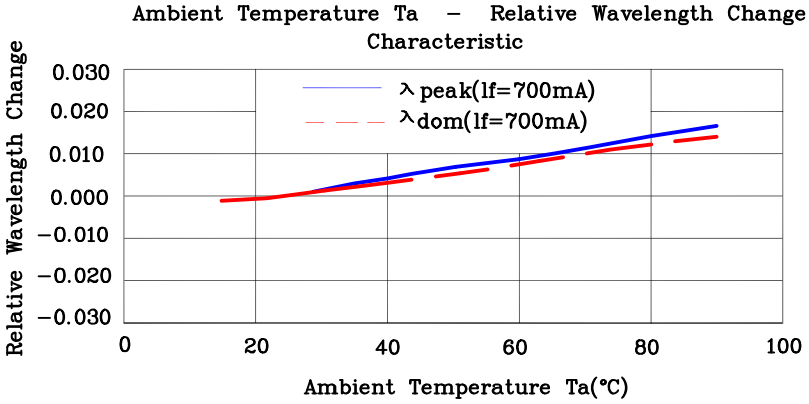


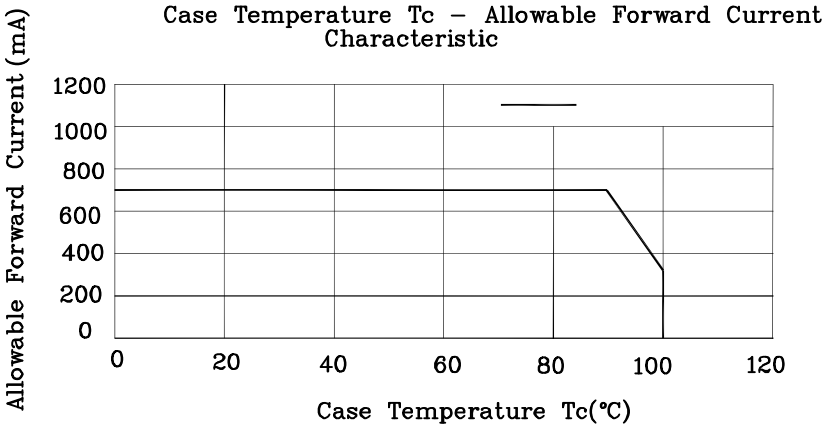


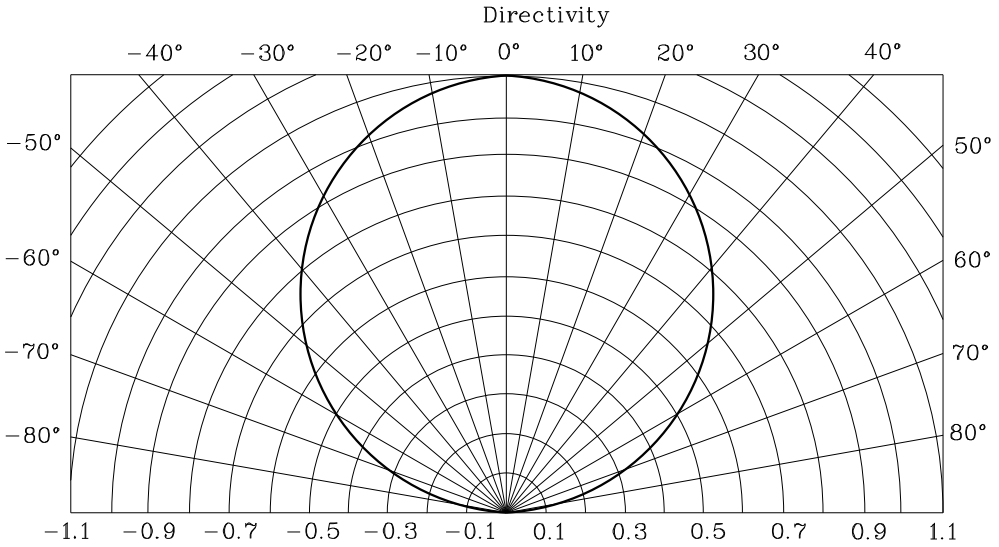



Ambient Temperature Ta – Forward Voltage Characteristic
If=700mA
Forward Voltage(V)
14
12
10
8
6
4
2
0
20
40
60
80
100
Ambient Temperature Ta(°C)


Ambient Temperature Ta – Relative Total Luminous Flux Characteristic
If=700mA
Relative Total Luminous Flux
140%
120%
100%
80%
60%
40%
20%
0%
0
20
40
60
80
100
Ambient Temperature Ta(°C)


Ambient Temperature Ta – Relative Wavelength Change Characteristic
λpeak(If=700mA)
λdom(If=700mA)
Relative Wavelength Change
0.030
0.020
0.010
0.000
−0.010
−0.020
−0.030
0
20
40
60
80
100
Ambient Temperature Ta(°C)


Case Temperature Tc – Allowable Forward Current Characteristic
Allowable Forward Current (mA)
1200
1000
800
600
400
200
0
0
20
40
60
80
100
120
Case Temperature Tc(℃)


Directivity
−40°
−30°
−20°
−10°
0°
10°
20°
30°
40°
−50°
−60°
−70°
−80°
50°
60°
70°
80°
−1.1
−0.9
−0.7
−0.5
−0.3
−0.1
0.1
0.3
0.5
0.7
0.9
1.1

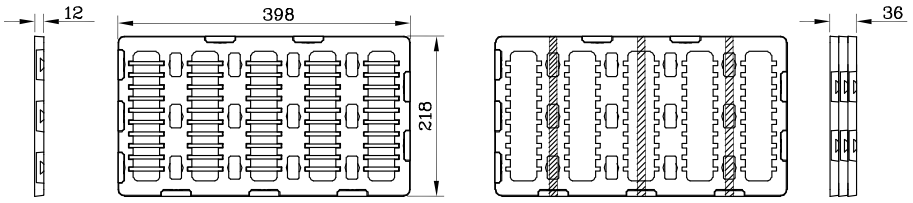

X
Y
X Direction
Y Direction

PACKING & LABEL SPECIFICATIONS

PACKING & LABEL SPECIFICATION

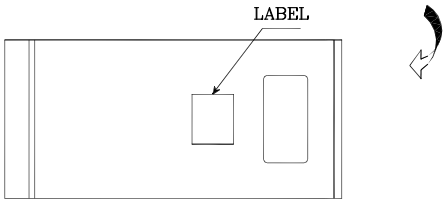
(1) Primary packing
50 pieces are contained in each tray.
Two trays which collectively contain 100 pieces are stacked together with an additional empty tray as lid.
Tray (Dimensions: 398x218x12mm, materials: electrically conductive PS.)

(2) Secondary packing
A set of three trays is placed in bag. (100 pieces per bag.)
An indication label which specifies product name,quantity,lot number and shipment date is attached to the outside of the 9# box.(800 pieces per box.)

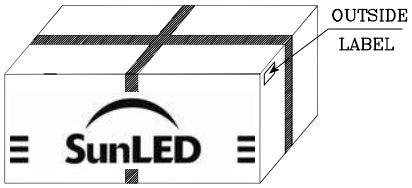


PRODUCT 50PCS/TRAY

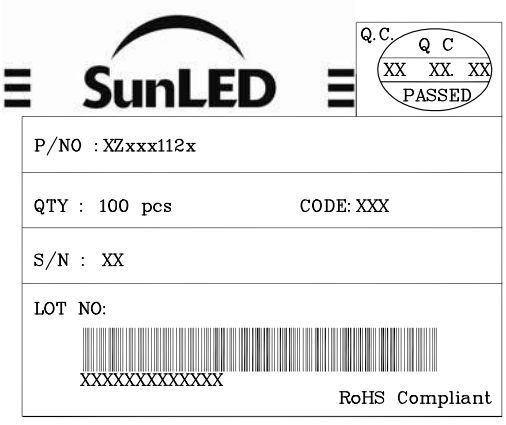
100PCS/BUNDLE



100PCS / BAG



300 PCS / BOX



TERMS OF USE

1. Data presented in this document reflect statistical figures and should be treated as technical reference only.
2. Contents within this document are subject to improvement and enhancement changes without notice.
3. The product(s) in this document are designed to be operated within the electrical and environmental specifications indicated on the datasheet. User accepts full risk and responsibility when operating the product(s) beyond their intended specifications.
4. The product(s) described in this document are intended for electronic applications in which a person's life is not reliant upon the LED. Please consult with a SunLED representative for special applications where the LED may have a direct impact on a person's life.
5. The contents within this document may not be altered without prior consent by SunLED.
6. Additional technical notes are available at http://www.SunLEDusa.com/TechnicalNotes.asp

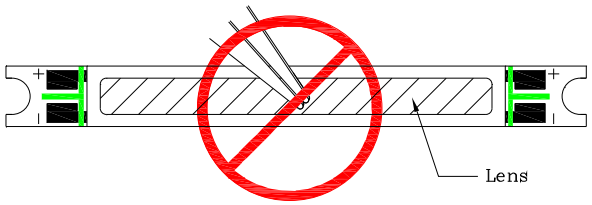
XZxxx112x-A Application Notes

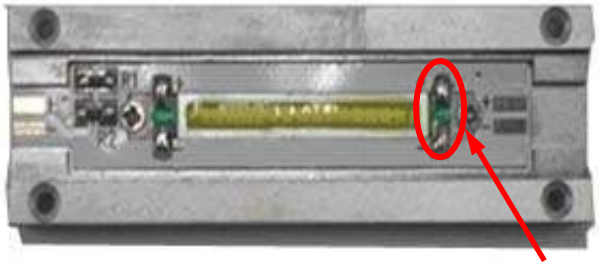
Introduction

The XZxx112x-A high power LED series provides a high intensity output in a linear emission pattern which can be used across a wide range of applications. Thermal management should be taken into consideration and monitored to ensure operating temperature stays within spec (Ref. page 2). The following application notes are suggested for maintaining optimal operating temperature.

Precautions

1. Avoid having sharp objects come in contact with the lens. No external stress should be applied on the lens.
2. It is recommended to wear an anti-static wristband or gloves when handling the LED to prevent ESD (electro-static discharge) damage.
3. Forward current should be reduced under higher case temperatures to prevent damage due to overheating (Ref. page 5).

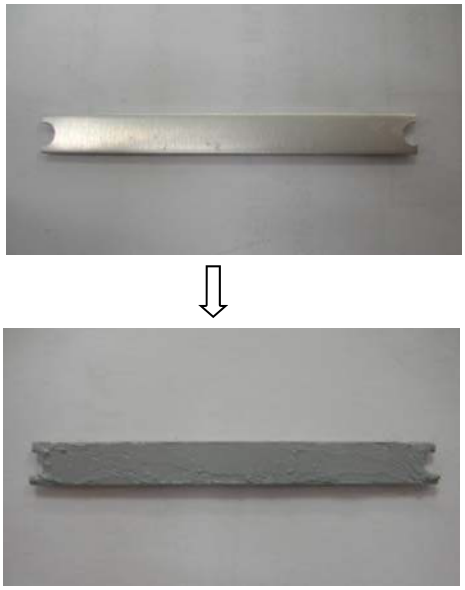




It is strongly recommended that the temperature of the solder pad should not exceed 75°C during operation of the Axsolight.

Recommended Procedures

1. Apply a thin layer (0.1-0.2mm) of thermal paste on the bottom of the LED for better thermal conductivity.

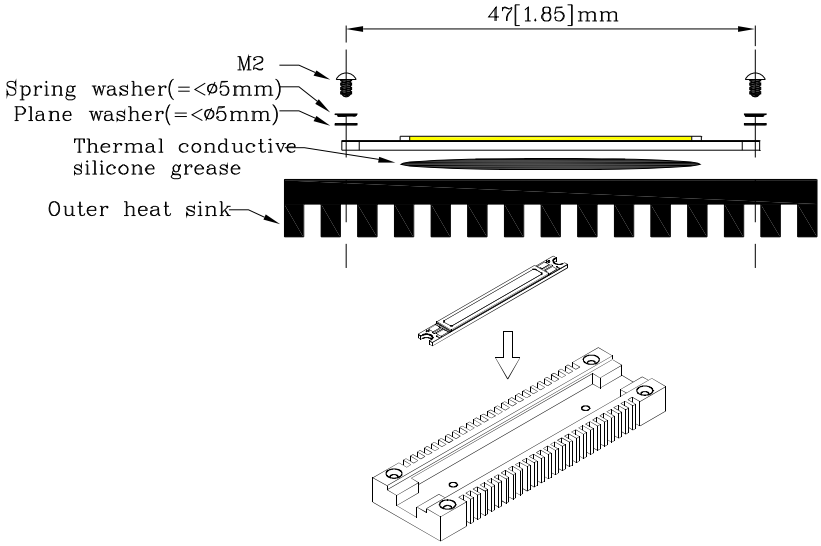


2. An adequate heat sink is required for high powered LEDs:

Current (mA)	350	500	600	700
Heat sink surface area (mm^2)	10,000	15,000	17,000	21,000

3. Press the Axsolight firmly onto the heat sink to establish full contact between the LED and heat sink. M2 screws are recommended for securing the LED onto the heat sink. Ensure screws are not over tightened to prevent stress on the LED.

4. A constant current source is recommended to power the LED.



5. A series connection is recommended when multiple units are used in the same circuit.

6. Soldering notes:
- Soldering iron power should not exceed 40W (max. soldering temperature: 350C).
- Soldering iron should not be in contact with the solder pad for more than 3.5 seconds.
- Avoid touching the LED immediately after soldering.
- Not compatible with IR- reflow.

7. As silicone encapsulation is permeable to gases, some corrosive substances such as H_2S might corrode silver plating of leadframe. Special care should be taken if an LED with silicone encapsulation is to be used near such substances.