

### XI3030P 0.2W EU (4C) Series



#### Features

- Top view white LED
- High luminous intensity output
- Typical Viewing Angle:120°
- Pb-free
- RoHS compliant

#### Description

The Everlight XI3030P package has high efficacy, mid power consumption, wide viewing angle and a compact form factor. These features make this package an ideal LED for all lighting applications.

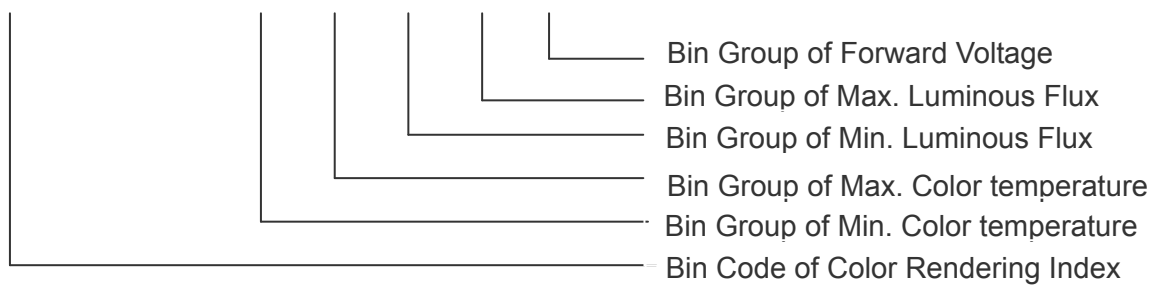
#### Applications

- General lighting
- Decorative and Entertainment Lighting
- Indicators
- Illumination

## Product Nomenclature

The product name is designated as below:

**XI3030P/ XK 4 C – 3M XX XX XX XX XX U6/ 2N / EU**



## Table of Color Rendering Index

Symbol	Description
M	CRI(Min.) : 60
N	CRI(Min.) : 65
L	CRI(Min.) : 70
Q	CRI(Min.) : 75
K	CRI(Min.) : 80
P	CRI(Min.) : 85
H	CRI(Min.) : 90

### Notes:

1. Tolerance of Color Rendering Index:  $\pm 2$

## Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Max. DC Forward Current (mA)	$I_F$	200	mA
Thermal Resistance	$R_{th}$	15	°C/W
Max. Junction Temperature	$T_J$	125	°C
Operating Temperature	$T_{Opr}$	-40 ~ +85	°C
Storage Temperature	$T_{Stg}$	-40 ~ +100	°C
Max. Soldering Temperature	$T_{Sol}$	260	°C
Max. Allowable Reflow Cycles	n/a	2	cycles

**Notes:**

1. Duty cycle = 1/10@1KHZ

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PN of the XI3030P 0.2W EU (4C) Series: White LEDs (CRI>70)



Order Code of XI3030P	Minimum Luminous Flux (lm)	Typical Luminous Flux (lm)	CCT (K)	Forward Voltage (V)	Current (mA)	CRI (Min.)
XI3030P/LK4C-3M2727N3PB25311U6/2N/EU	24	30	2700K	2.5~3.1	65	70
XI3030P/LK4C-3M3030N3PB25311U6/2N/EU	24	32	3000K	2.5~3.1	65	70
XI3030P/LK4C-3M3535N3PB25311U6/2N/EU	24	32	3500K	2.5~3.1	65	70
XI3030P/LK4C-3M4040N41PB25311U6/2N/EU	27	34	4000K	2.5~3.1	65	70
XI3030P/LK4C-3M5050N41PB25311U6/2N/EU	27	35	5000K	2.5~3.1	65	70
XI3030P/LK4C-3M5757N41PB25311U6/2N/EU	27	35	5700K	2.5~3.1	65	70
XI3030P/LK4C-3M6565N41PB25311U6/2N/EU	27	35	6500K	2.5~3.1	65	70

**Notes:**

1. Luminous flux measurement tolerance:  $\pm 10\%$ .
2. The data of luminous flux measured at thermal pad= $25^{\circ}\text{C}$
3. Typical luminous flux or light output performance is operated within the condition guided by this datasheet.
4. The CRI value is based on the Everlight testing instrument.
5. CRI measurement tolerance:  $\pm 2$ .

PN of the XI3030P 0.2W EU (4C) Series: White LEDs (CRI>80)



Order Code of XI3030P	Minimum Luminous Flux (lm)	Typical Luminous Flux (lm)	CCT (K)	Forward Voltage (V)	Current (mA)	CRI (Min.)
XI3030P/KK4C-3M2727N3PB25311U6/2N/EU	24	30	2700K	2.5~3.1	65	80
XI3030P/KK4C-3M3030N3PB25311U6/2N/EU	24	32	3000K	2.5~3.1	65	80
XI3030P/KK4C-3M3535N3PB25311U6/2N/EU	24	32	3500K	2.5~3.1	65	80
XI3030P/KK4C-3M4040N41PB25311U6/2N/EU	27	34	4000K	2.5~3.1	65	80
XI3030P/KK4C-3M5050N41PB25311U6/2N/EU	27	35	5000K	2.5~3.1	65	80
XI3030P/KK4C-3M5757N41PB25311U6/2N/EU	27	35	5700K	2.5~3.1	65	80
XI3030P/KK4C-3M6565N41PB25311U6/2N/EU	27	35	6500K	2.5~3.1	65	80

Notes:

1. Luminous flux measurement tolerance:  $\pm 10\%$ .
2. The data of luminous flux measured at thermal pad=25°C
3. Typical luminous flux or light output performance is operated within the condition guided by this datasheet.
4. The CRI value is based on the Everlight testing instrument.
5. CRI measurement tolerance:  $\pm 2$ .

PN of the XI3030P 0.2W EU (4C) Series: White LEDs (CRI>90)



Order Code of XI3030P	Minimum Luminous Flux (lm)	Typical Luminous Flux (lm)	CCT (K)	Forward Voltage (V)	Current (mA)	CRI (Min.)
XI3030P/HK4C-3M2727M4PB25311U6/2N/EU	21	25	2700K	2.5~3.1	65	90
XI3030P/HK4C-3M3030M4PB25311U6/2N/EU	21	25	3000K	2.5~3.1	65	90
XI3030P/HK4C-3M3535M4PB25311U6/2N/EU	21	27	3500K	2.5~3.1	65	90
XI3030P/HK4C-3M4040M4PB25311U6/2N/EU	21	27	4000K	2.5~3.1	65	90
XI3030P/HK4C-3M5050N3PB25311U6/2N/EU	24	28	5000K	2.5~3.1	65	90
XI3030P/HK4C-3M5757N3PB25311U6/2N/EU	24	28	5700K	2.5~3.1	65	90
XI3030P/HK4C-3M6565N3PB25311U6/2N/EU	24	28	6500K	2.5~3.1	65	90

Notes:

1. Luminous flux measurement tolerance:  $\pm 10\%$ .
2. The data of luminous flux measured at thermal pad=25°C
3. Typical luminous flux or light output performance is operated within the condition guided by this datasheet.
4. The CRI value is based on the Everlight testing instrument.
5. CRI measurement tolerance:  $\pm 2$ .

**Product Binning**  
**Luminous Flux Bins**

Group	Bin	Minimum Photometric Flux (lm)	MXIimum Photometric Flux (lm)	
M	4	21.0	24.0	
N	3	24.0	27.0	
	4	1	27.0	30.0
		2	30.0	33.0
P	3	33.0	36.0	
	A	36.0	40.0	
	B	40.0	45.0	

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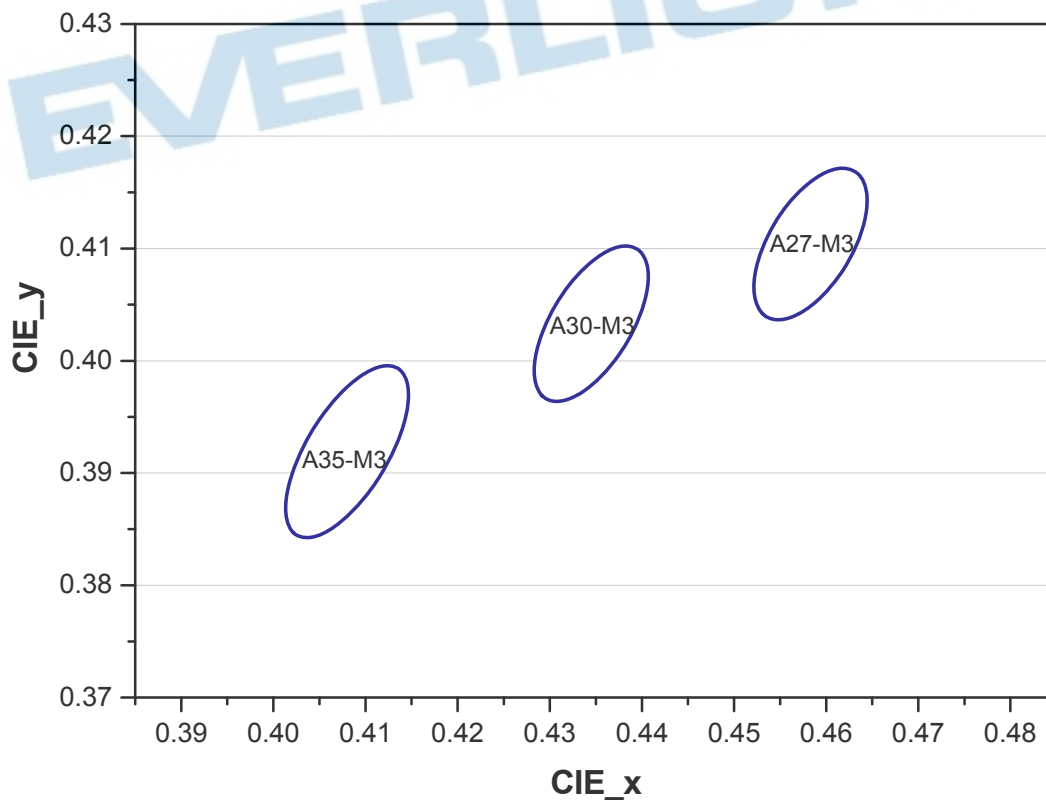
### Bin Code of Macadam 3 step

Step	CCT	Cx	Cy	a	b	theta
3	2700	0.4583	0.4104	0.00810	0.00420	49.70
	3000	0.4345	0.4033	0.00834	0.00408	50.22
	3500	0.4080	0.3919	0.00927	0.00414	51.00
	4000	0.3827	0.3803	0.00939	0.00402	54.80
	5000	0.3451	0.3559	0.00822	0.00354	64.12
	5700	0.3293	0.3423	0.00747	0.00321	66.51
	6500	0.3131	0.3290	0.00669	0.00285	64.57

**Notes:**

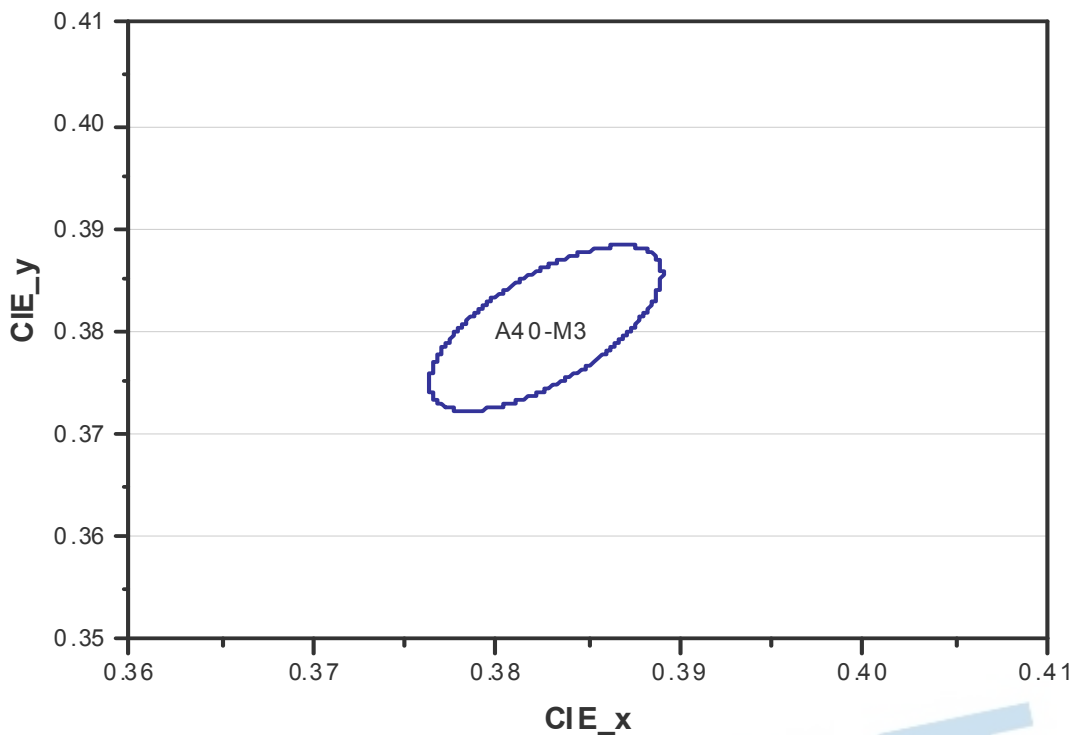
1. Color coordinates measurement allowance :  $\pm 0.01$
2. Color bins are defined at  $I_f=65\text{mA}$  operation

### Warm-White Bin Structure

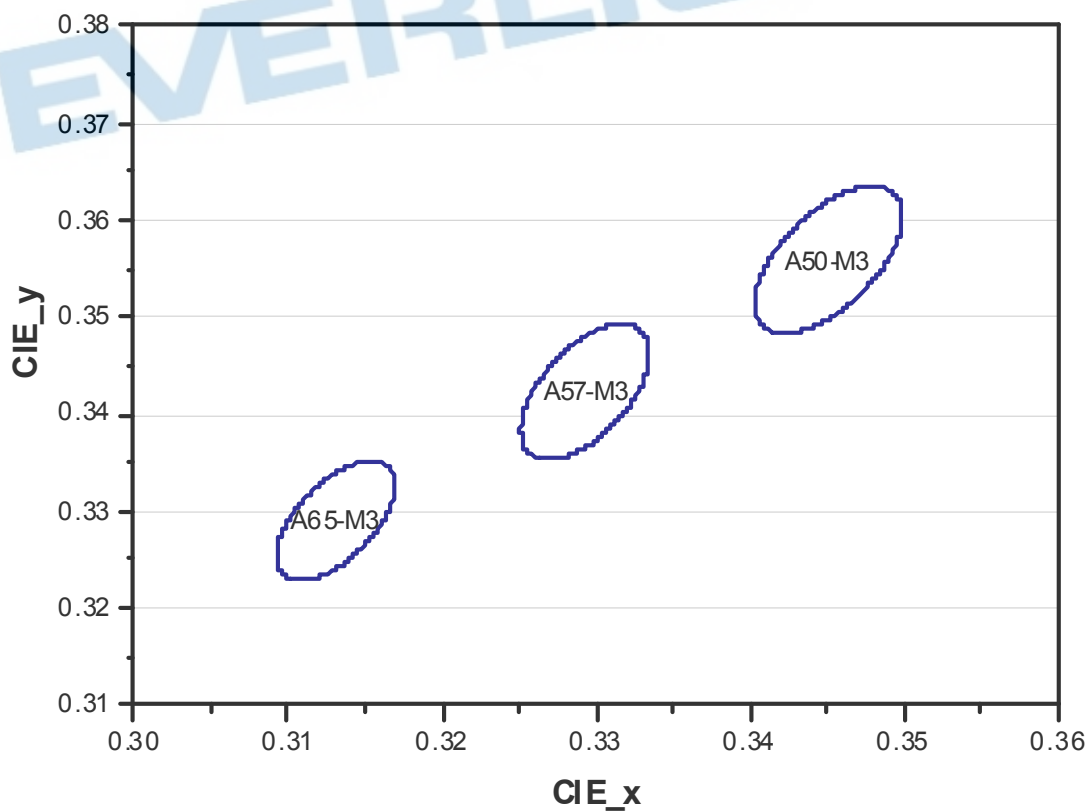




### Neutral-White Bin Structure



### Cool-White Bin Structure



### Forward Voltage Bins

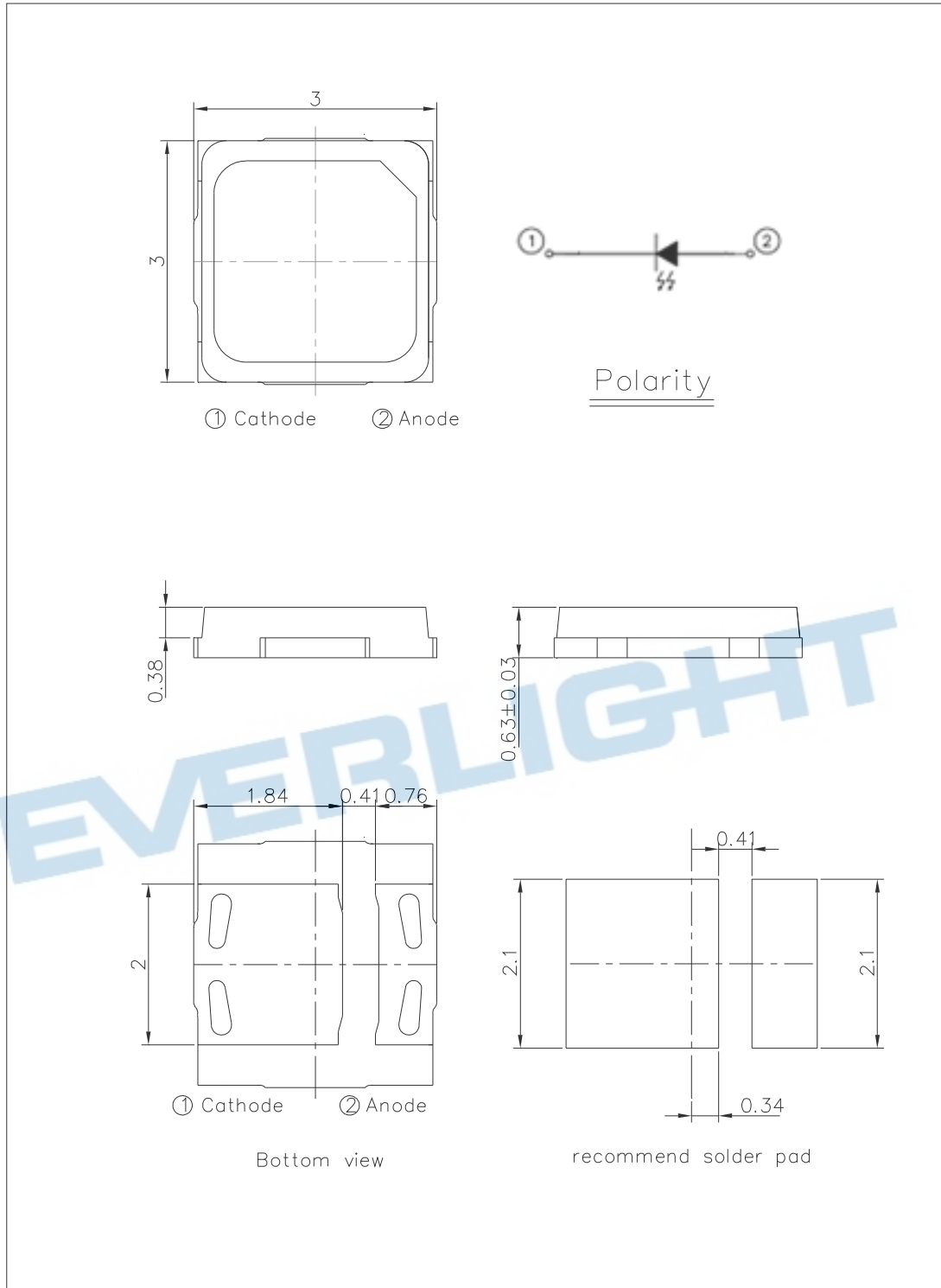
Bin	Minimum Forward Voltage (V)	MXIum Forward Voltage (V)
2#5	2.50	2.60
2#6	2.60	2.70
2#7	2.70	2.80
2#8	2.80	2.90
2#9	2.90	3.00
3#0	3.00	3.10

**Notes:**

1. Forward voltage measurement tolerance:  $\pm 2\%$
2. Forward voltage bins are defined at  $I_f=65\text{mA}$  operation.

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## Mechanical Dimension

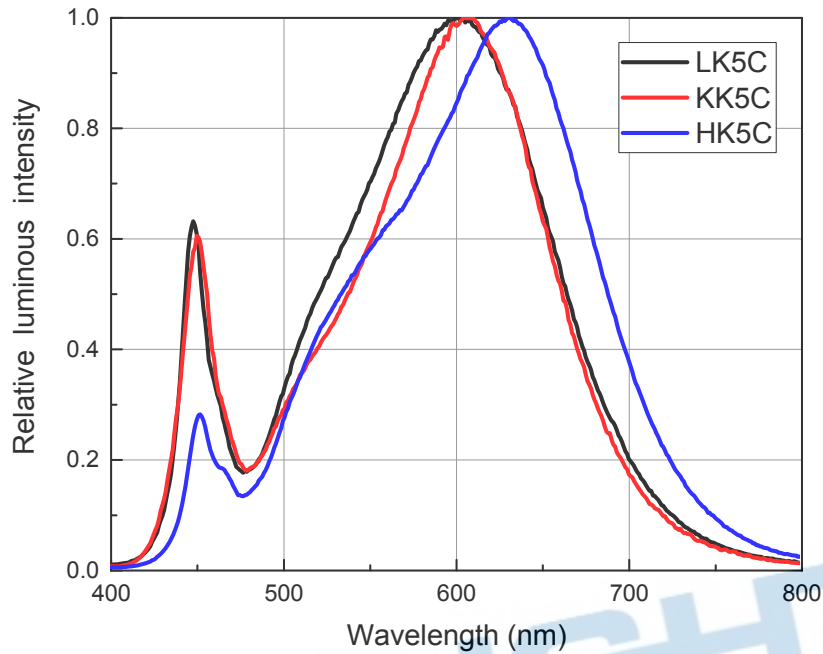


### Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are  $\pm 0.2\text{mm}$ .
3. The thermal pad is electrically unity from the Anode and contact pads.
4. Do not handle the device by the lens. Incorrect force applied to the lens may lead to the failure of devices.

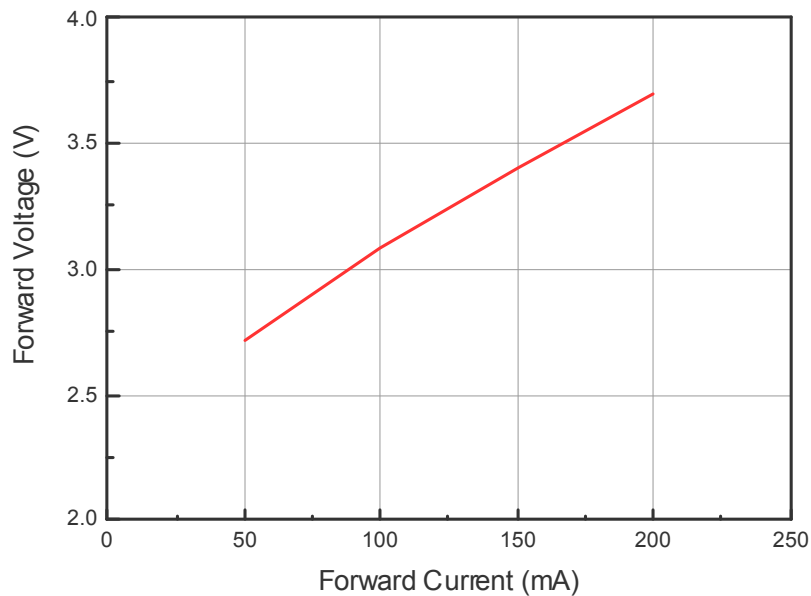
## Wavelength Characteristics

Relative Spectral Distribution  
@ Solder Pad Temperature = 25°C

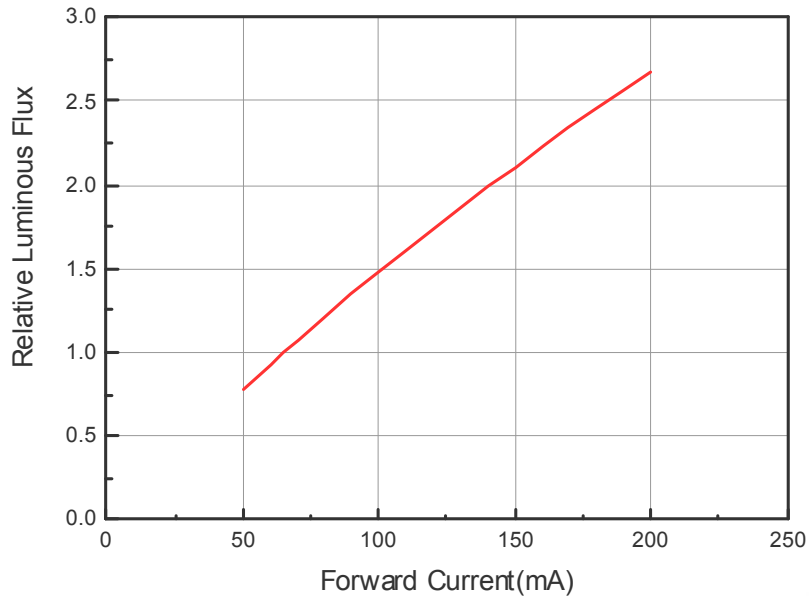


## Typical Electrical Characteristics

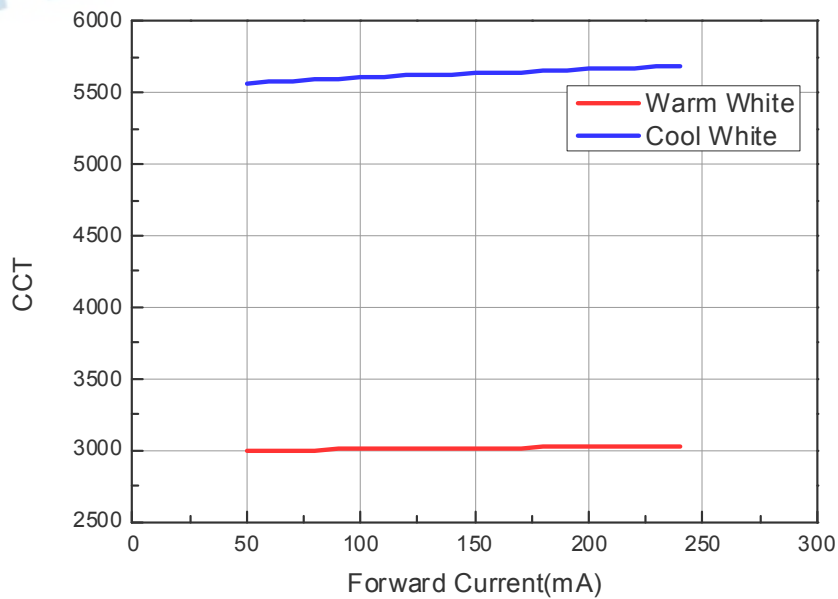
@ Solder Pad Temperature = 25°C



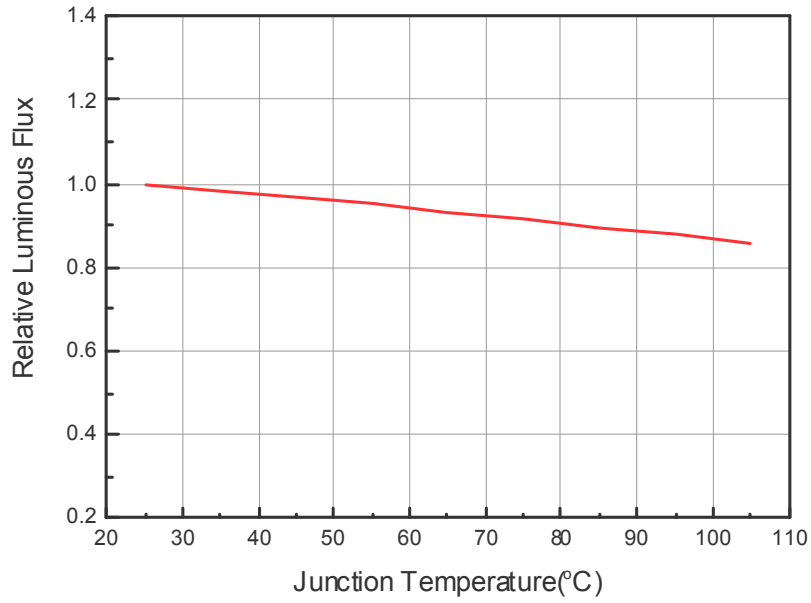
## Typical Relative Luminous Flux vs. Forward Current @ Solder Pad Temperature = 25°C



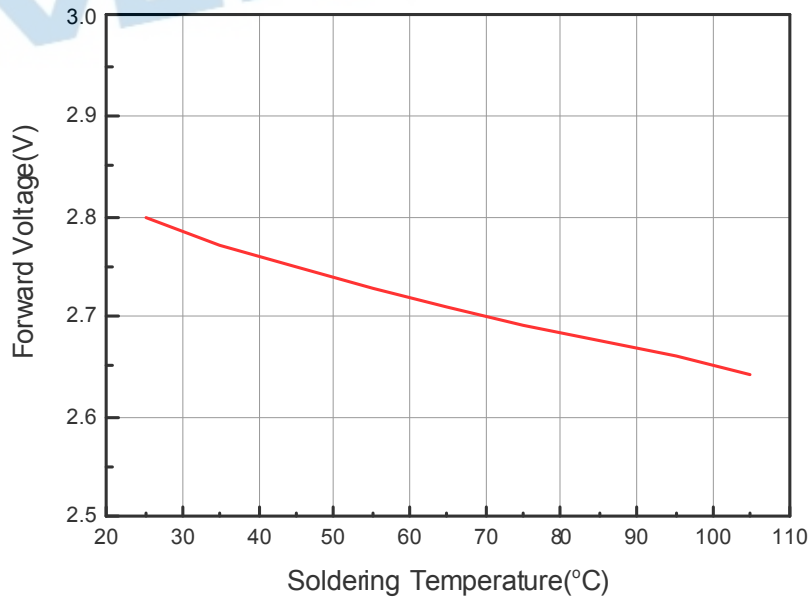
## Typical Wavelength & Color Shift Characteristics vs. Forward Current @ Solder Pad Temperature = 25°C



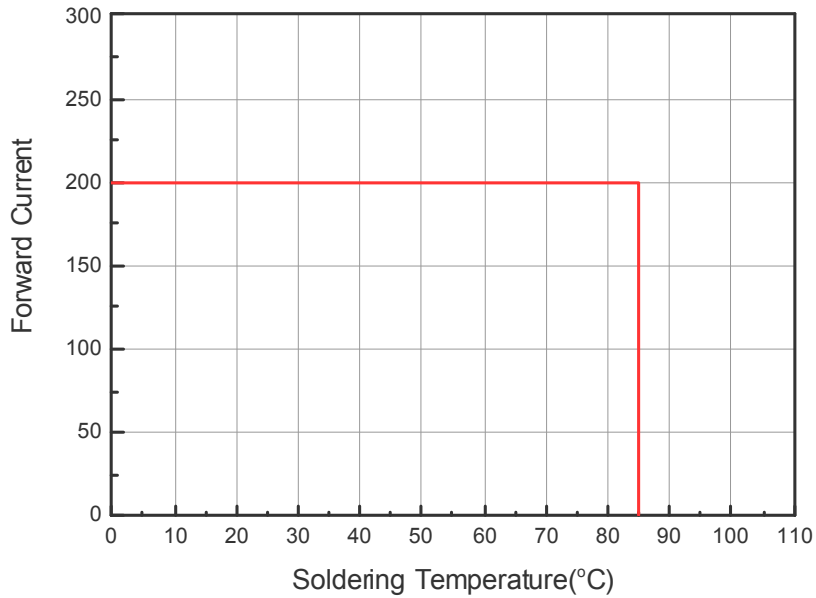
### Relative Luminous Flux vs. Junction Temperature @Forward Current = 65mA



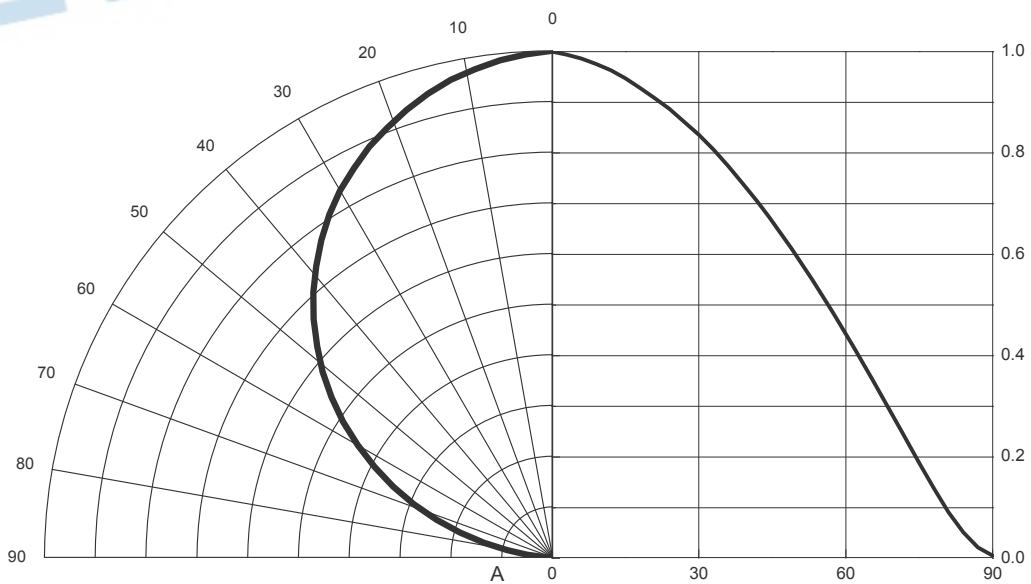
### Forward Voltage vs. Soldering Temperature @ Forward Current = 65mA



**Forward Current Derating Curve  
 @ Junction Temperature <125°C**



**Typical Radiation Patterns  
 XI3030P series: Typical Diagram Characteristics  
 of Radiation**



**Notes:**

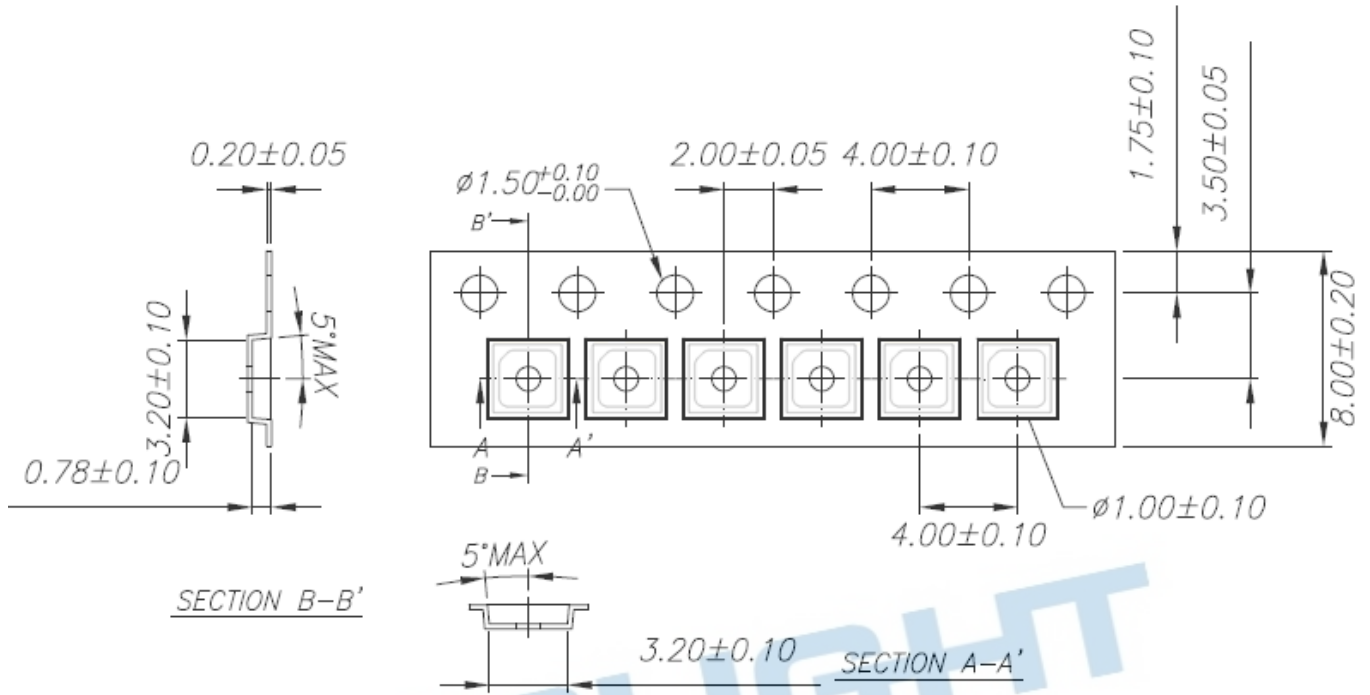
1.  $2\theta_{1/2}$  is the off XIs angle from lamp centerline where the luminous intensity is 1/2 of the peak value.

View angle tolerance is  $\pm 5^\circ$  .

## Emitter Tape Packaging

Carrier Tape Dimensions as the following:

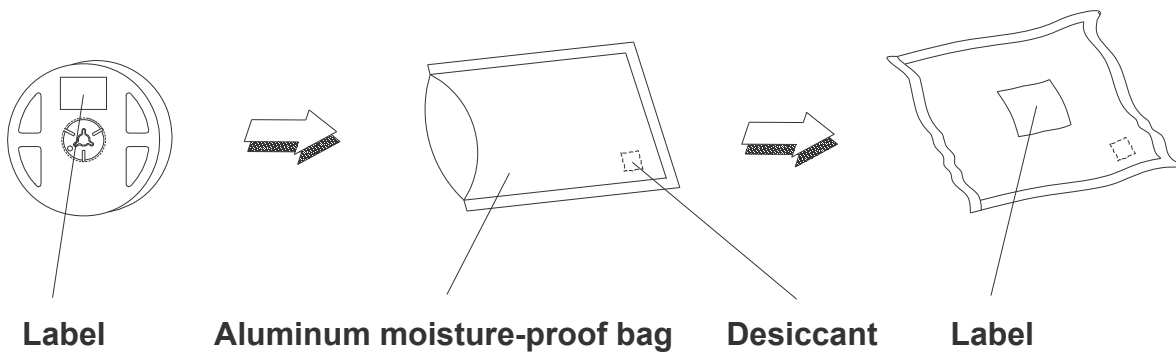
Reel:2000pcs



### Notes:

1. Tolerance unless mentioned is  $\pm 0.1$ mm; Unit = mm
2. Minimum packing amount is 250/500/1000/2000 pcs per reel

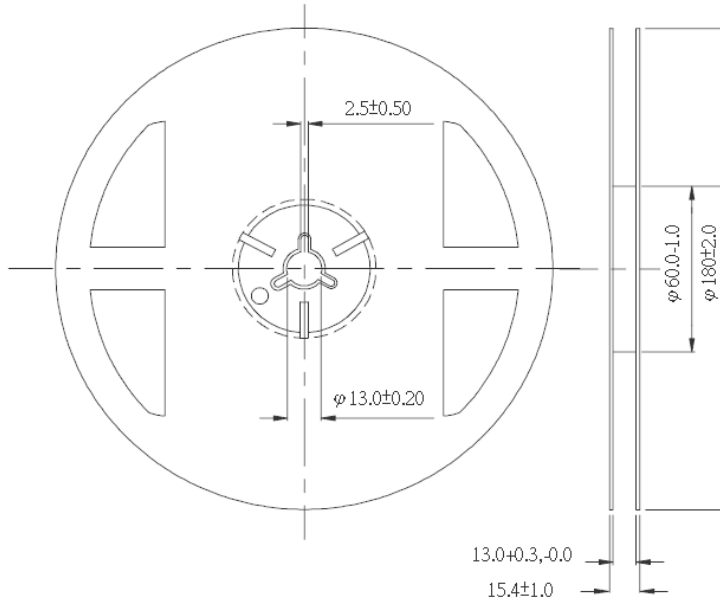
## Moisture Resistant Packaging





## Emitter Reel Packaging

### Reel Dimensions



#### Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are  $\pm 0.1$ mm.

## Product Labeling

### Label Explanation

CPN: Customer Specification (when required)

P/N : Everlight Production Number

QTY: Packing Quantity

CAT: Luminous Flux (Brightness) Bin

HUE: Color Bin

REF: Forward Voltage Bin

LOT No: Lot Number

MADE IN TAIWAN: Production Place

RoHS (Pb) EVERLIGHT 5

CPN: XXXXXXXXXXXXXXXXXXXXXXXX  
 XXXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXX-XXXXXX  
 P/N: XXXXXXXXXXXXXXXX  
 XXXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXX-XXXXXX  
 LOT NO: Y150716XXX-XXXXXXXXXX-XXXXXXXXXXXX  
 QTY: 0123456789 HUE: XXXXXXXXXXXX  
 CAT: XXXXXXXXXXXX REF: XXXXXXXXXXXX  
 REFERENCE: BTPYMMDDXXXXXX  
 MADE IN XXXXXX



## Precautions for Use

### 1. Over-current-proof

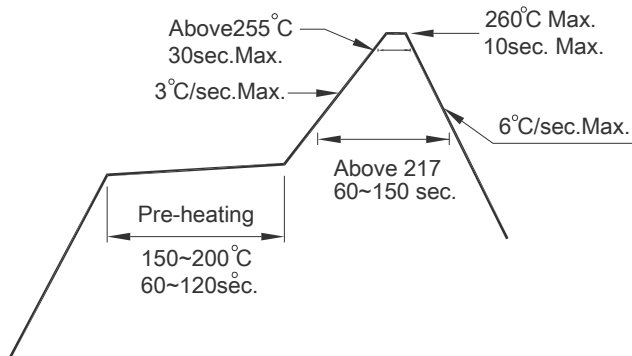
Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

### 2. Assemblies

Do not stack assemblies containing Everlight XI3030P LEDs to prevent damage to the optical surface of LEDs. Forces applied to the optical surface may result in the surface being damaged.

### 3. Soldering Condition

#### 3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

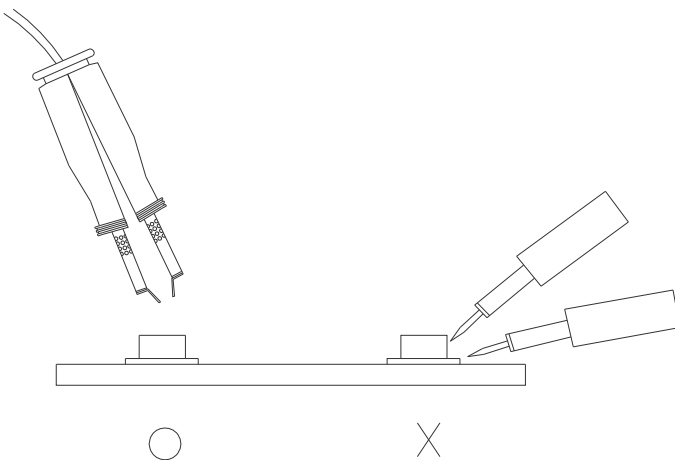
3.4 After soldering, do not warp the circuit board.

### 4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

### 5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



## Storage Conditions

- Before the package is opened. The LEDs should be stored at 30°C or less and 90%RH or less after being shipped from Everlight and the storage life limits are 18 months. The LEDs can be stored up to 3 years If in a sealed container with a nitrogen atmosphere and moisture absorbent material.
- After opening the package: The LED's floor life is 1 year under 30°C or less and 60%RH or less. The LED should be soldered with 168hrs (7days) after opening the package. If unused LEDs remain, it should be stored in moisture proof packages.
- If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment: 60±5°C for 24 hours.

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## Revision History

Current version: Mar.14.2016  
Issue No: DHE-0003068  
Version: 1  
Created by: YT Wang

Page	Subjects (major change in previous version)	Date of change

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