DATASHEET

XUAN 1919 烜

36V/25W MC3-5/EU series

Introduction

Everlight`s COB Series is an aluminum substrate based LED achieving high efficiency while maintaining high CRI at Energy Star / ANSI color temperature ranges.

Features

- High Power COB & High CRI LED
- Multi-Chip Solution
- Dimension:19 mm x 19 mm x 1.6 mm
- Main Parameters: Luminous Flux, Forward Voltage , Chromaticity and Color Rendering Index
- RoHS compliant
- Energy Star / ANSI Compliant Binning Structure
- Typical Viewing Angle: 115°

Applications

- Replacement Bulb
- Indoor General Lighting
- Recessed Can Lighting

Table of Contents

Product Nomenclature

The product name is designated as below:

XUAN1919-CDEFGHJ-KLMNP-QRST

Family name
XUAN1919

Designation:

CD = lighting color and wavelength [1]
EF = color bin or CCT bin
G = available in # step ANSI bin
HJ = min. luminous flux (lm) or radiation power (mW) performance
KL = forward voltage bin[2]
M = internal code
NP = power consumption[3]
Q= internal code
R= Dam Diameter[4]
S= internal code
T=Type of Package[5]

Notes

1. Table of lighting color and wavelength

Symbol	Color	CCT range	Color Rendering Index
GT	Cool-White	4745~7050K	>65
KT	Cool-White	4745~7050K	>80
LM	Warm-White	2580~3710K	>70
	Neutral-White	3710~4745K	
KM	Warm White	2580~3710K	>80
	Neutral-White	3710~4745K	

2. Table of forward voltage bin

Symbol	Description
36	36V Input Voltage

3. Power consumption:

Symbol	Description
25	25W

4. Dam Diameter:

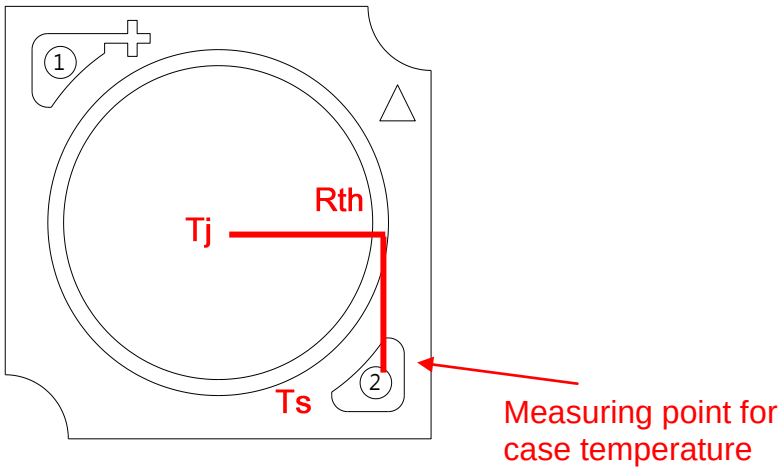
Symbol	Description
E	14.0-14.9mm

5. Table of packaging types:

Symbol	Description
T	Tray

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Max. DC Forward Current (mA) [4],[5]	I_F	1440	mA
Max. Pulse Forward Current (mA)	I_P	2160	mA
Power Dissipation	Pd	57	W
Thermal Resistance	R_{th}	0.46	°C/W
Max. Junction Temperature	T_J	120	°C
Operating Temperature[4],[5]	T_{Opr}	-40 ~ +85	°C
Storage Temperature	T_{Stg}	-40 ~ +85	°C



Notes:

1. For optimal performance, Everlight recommends 720mA operation.
2. tp ≦100ms, Duty cycle = 25%
3. The XUAN1919 36V/25W series LEDs are not designed for reverse bias use.
4. Power dissipation and forward current are the value when the module temperature is set lower than the rating by using an adequate heat sink.

PN of the XUAN1919 Series : White LEDs

Color	Order Code of XUAN1919	Minimum Luminous Flux (lm)	Typical Luminous Flux (lm)	CCT (K)	Forward Voltage (V)	Forward Current (mA)	CRI (min.)
Warm White 2700	**XUAN1919-KM273S3-36C25-3E0T/EU**	2600	2910	27KM3	33.0~41.0	720	80
Warm White 3000	**XUAN1919-KM303S4-36C25-3E0T/EU**	2800	3050	30KM3	33.0~41.0	720	80
Warm White 3500	**XUAN1919-KM353S4-36C25-3E0T/EU**	2800	3135	35KM3	33.0~41.0	720	80
Neutral White 4000	**XUAN1919-KM403S4-36C25-3E0T/EU**	2800	3220	40KM3	33.0~41.0	720	80
Neutral White 4500	**XUAN1919-KM453S4-36C25-3E0T/EU**	2800	3230	45KM3	33.0~41.0	720	80
Cool White 5000	**XUAN1919-KT505S5-36C25-3E0T/EU**	3000	3335	50KM5	33.0~41.0	720	80
Cool White 5700	**XUAN1919-KT575S5-36C25-3E0T/EU**	3000	3360	57KM5	33.0~41.0	720	80
Cool White 6500	**XUAN1919-KT655S5-36C25-3E0T/EU**	3000	3360	65KM5	33.0~41.0	720	80

Notes:

1. CRI measurement tolerance: ±2.
2. Luminous flux measurement tolerance: ±10%.
3. The data of luminous flux measured at thermal pad=25℃
4. Typical luminous flux or light output performance is operated within the condition guided by this datasheet.

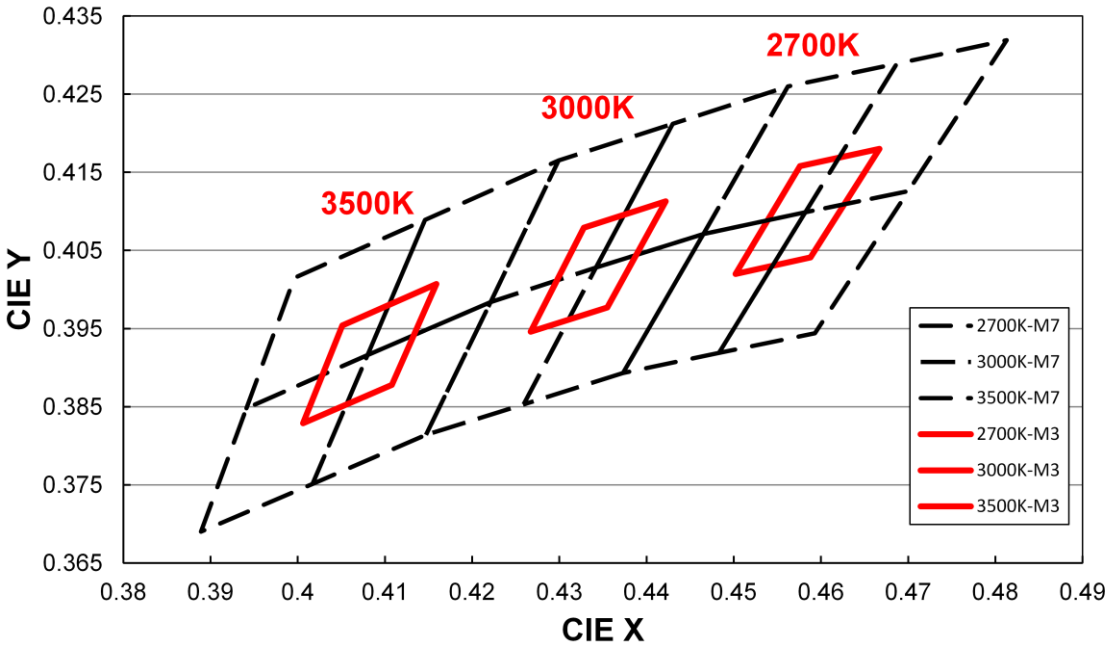
Product Binning

Luminous Flux Bins

Group	Bin	Minimum Photometric Flux (lm)	Maximum Photometric Flux (lm)
J	1	100	110
	2	110	120
	3	120	130
	4	130	140
	5	140	150
	6	150	160
	7	160	180
	8	180	200
	9	200	225
K	1	225	250
	2	250	275
	3	275	300
	4	300	325
	5	325	350
	6	350	375
	7	375	400
	8	400	425
	9	425	450
N	1	450	475
	2	475	500
	3	500	550
	4	550	600
	5	600	650
	6	650	700
	7	700	750
	8	750	800
	9	800	900

Group	Bin	Minimum Photometric Flux (lm)	Maximum Photometric Flux (lm)
P	1	900	1000
	2	1000	1100
	3	1100	1200
	4	1200	1350
	5	1350	1500
	6	1500	1650
	7	1650	1800
	8	1800	2000
	9	2000	2200
S	1	2200	2400
	2	2400	2600
	3	2600	3200
	4	2800	3400
	5	3000	3600

Warm-White Bin Structure



Warm-White Bin Coordinates

2700K

Bin	CIE X	CIE Y
27KM3	0.4502	0.4020
	0.4576	0.4158
	0.4667	0.4180
	0.4588	0.4041
Reference Range: 2664~2772K		

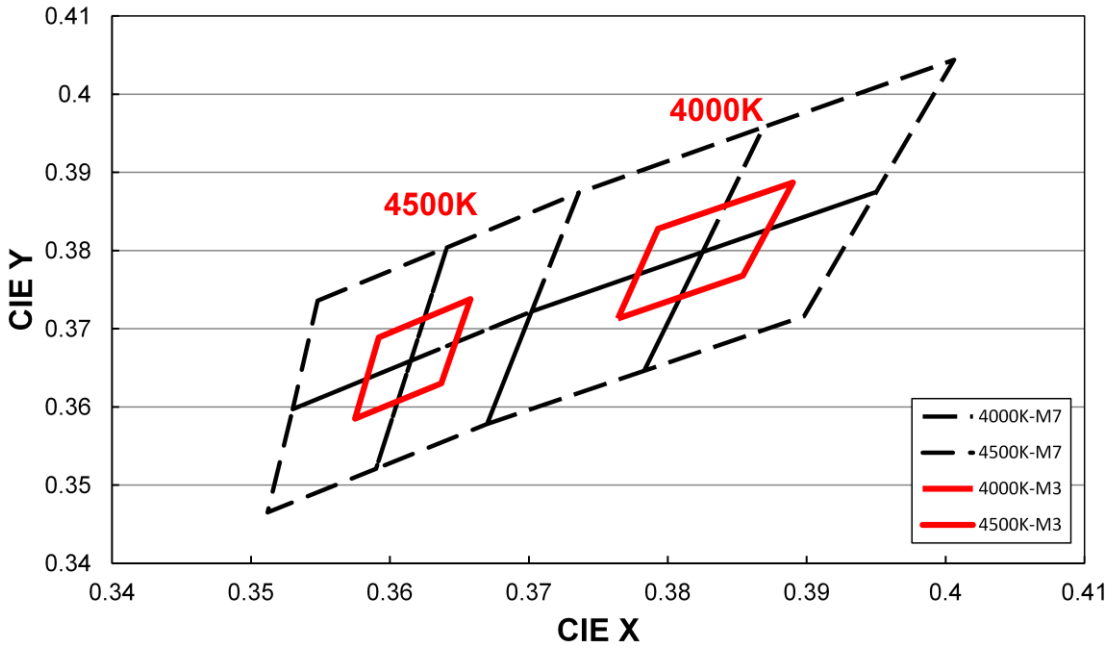
3000K

Bin	CIE X	CIE Y
30KM3	0.4267	0.3946
	0.4328	0.4079
	0.4422	0.4113
	0.4355	0.3977
Reference Range: 2961~3078K		

3500K

Bin	CIE X	CIE Y
35KM3	0.4006	0.3829
	0.4051	0.3954
	0.4159	0.4007
	0.4108	0.3878
Reference Range: 3357~3541K		

Neutral-White Bin Structure



Neutral-White Bin Coordinates

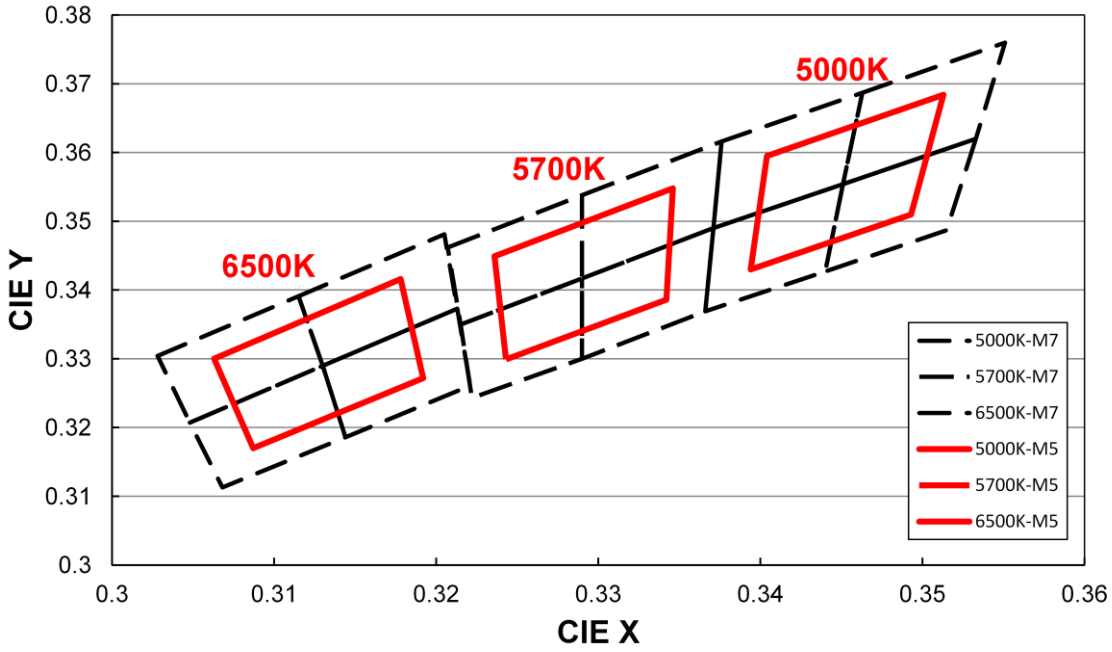
4000K

Bin	CIE X	CIE Y
40KM3	0.3764	0.3713
	0.3793	0.3828
	0.3890	0.3887
	0.3854	0.3768
Reference Range: 3867~4073K		

4500K

Bin	CIE X	CIE Y
45KM3	0.3575	0.3585
	0.3592	0.3689
	0.3658	0.3738
	0.3637	0.3630
Reference Range: 4401~4581K		

Cool-White Bin Structure



Cool-White Bin Coordinates

5000K

Bin	CIE X	CIE Y
50KM5	0.3394	0.3430
	0.3404	0.3595
	0.3513	0.3684
	0.3493	0.3510
Reference Range: 4837~5202K		

5700K

Bin	CIE X	CIE Y
57KM5	0.3243	0.3299
	0.3236	0.3449
	0.3346	0.3548
	0.3342	0.3386
Reference Range: 5419~5893K		

6500K

Bin	CIE X	CIE Y
65KM5	0.3087	0.3170
	0.3063	0.3300
	0.3178	0.3416
	0.3192	0.3272
Reference Range: 6166~6849K		

Notes:

1. Color coordinates measurement allowance : ±0.01.

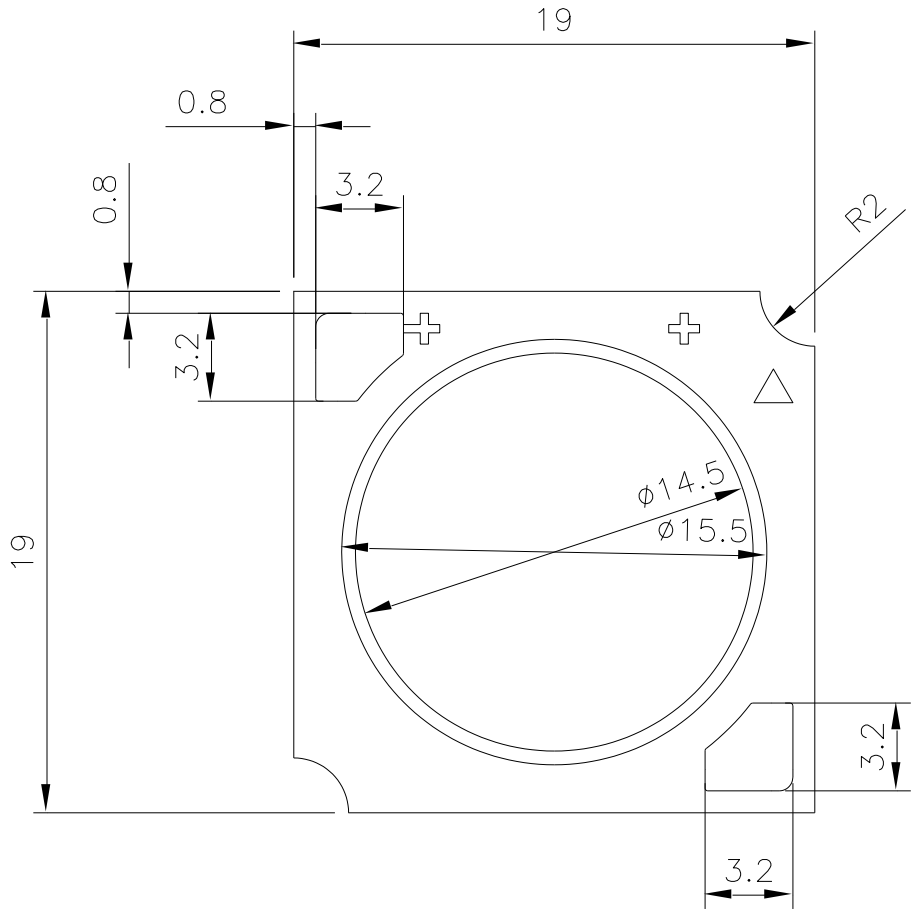
Forward Voltage Bins

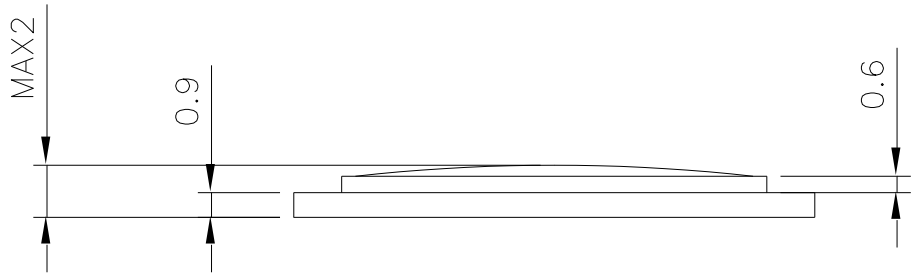
Bin	Minimum Forward Voltage (V)	Maximum Forward Voltage (V)
W4	33.0	41.0

Notes:

1. Forward voltage measurement tolerance: ±2%.
2. Forward voltage bins are defined at I_F=720mA operation.
3. Other Forward Voltage bins for White LEDs available upon request. Please contact your local Everlight sales office.

Mechanical Dimension



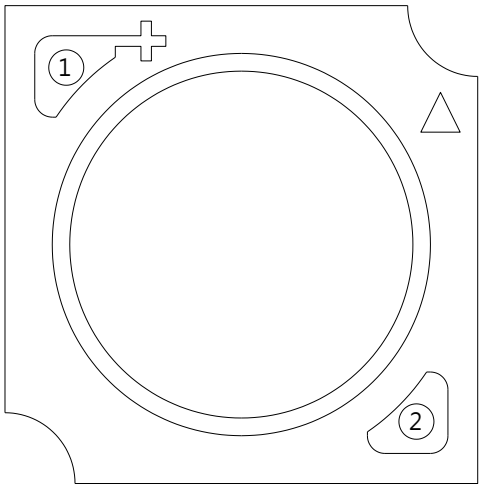


12series x 12parallel

Note:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are ±0.1mm.

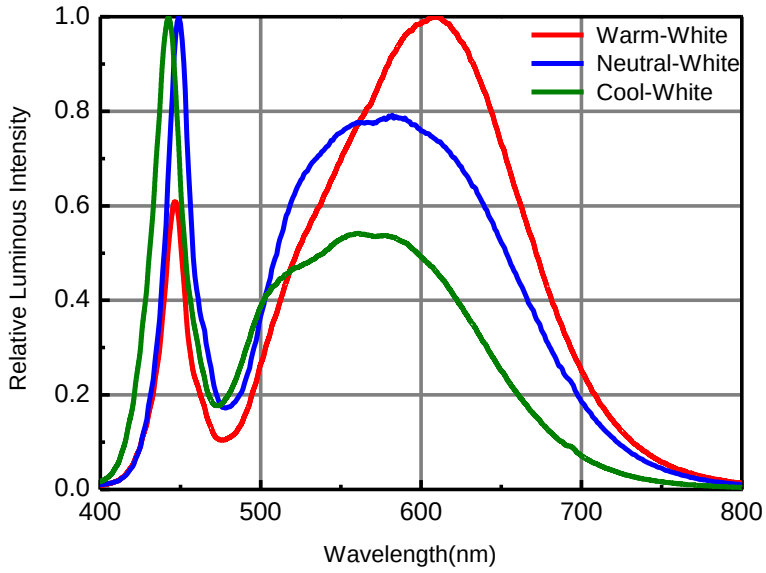
Pad Configuration



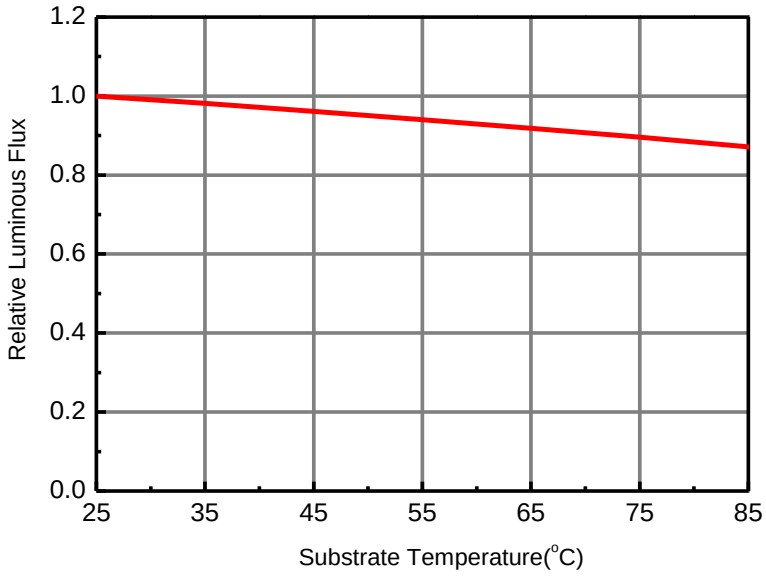
PAD	FUNCTION
1	ANODE
2	CATHODE

Typical Electro-Optical Characteristic Curve

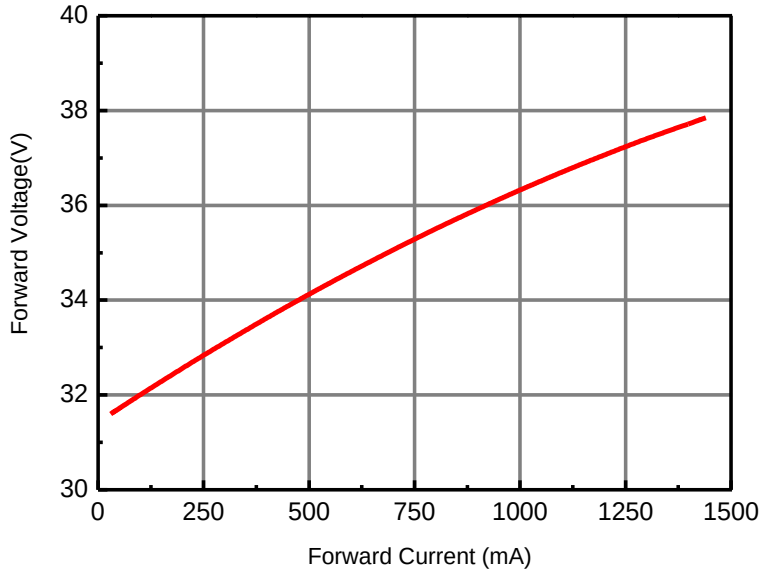
Relative Spectral Distribution
@ Substrate Temperature = 25℃



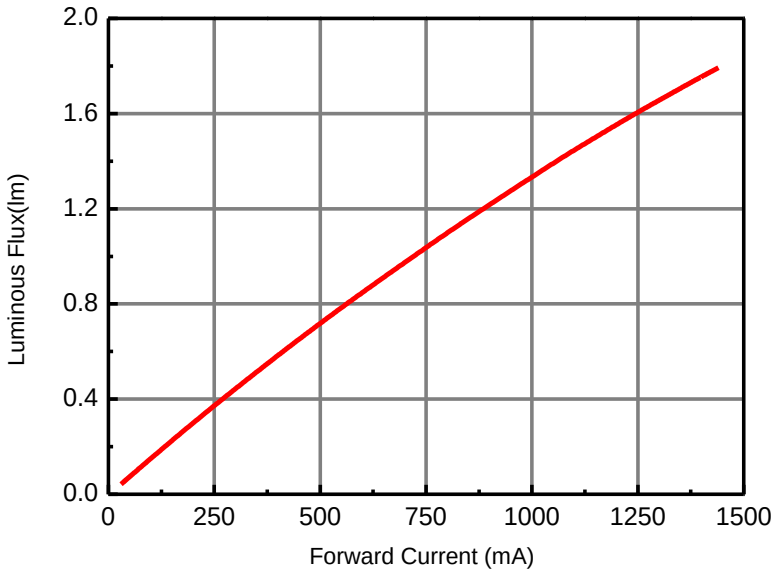
Relative Luminous Flux vs. Substrate Temperature
@Forward Current = 720mA



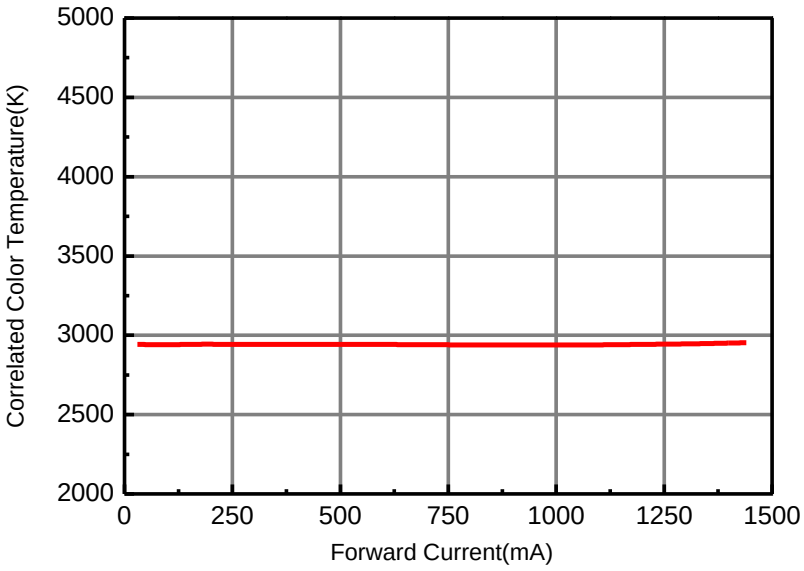
Forward Voltage vs. Forward Current
@ Substrate Temperature = 25℃



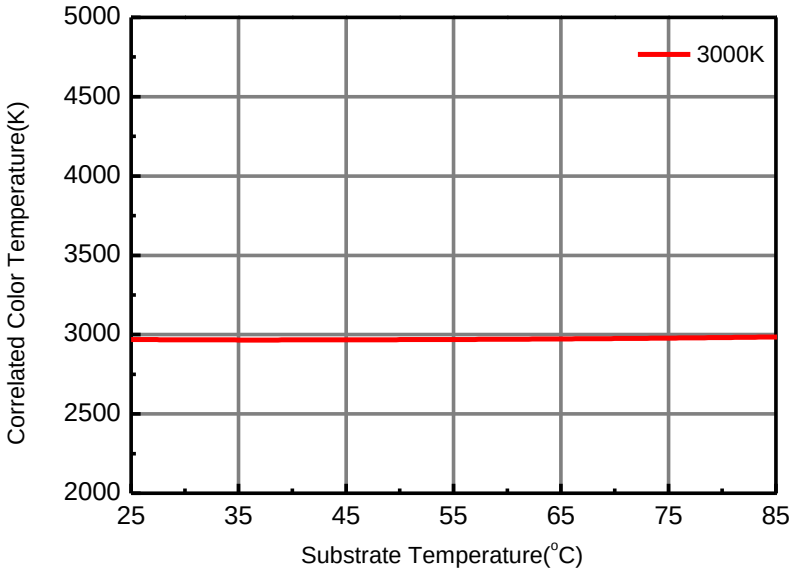
Luminous Flux vs. Forward Current
@ Substrate Temperature = 25℃



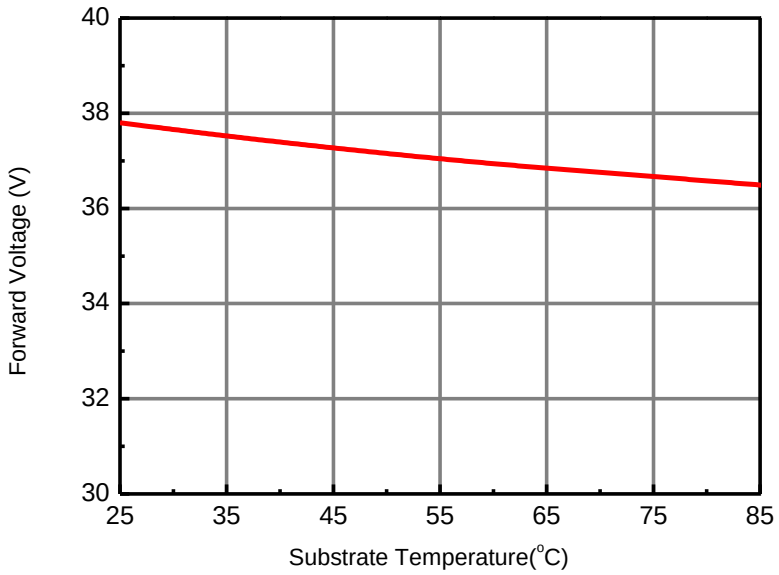
Correlated Color Temperature vs. Forward Current
@ Substrate Temperature = 25℃



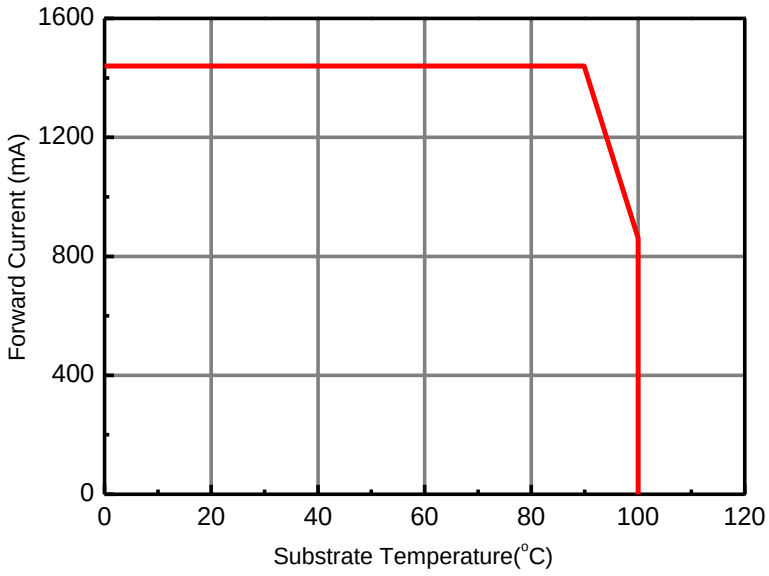
Correlated Color Temperature vs. Substrate Temperature
@ Forward Current = 720mA



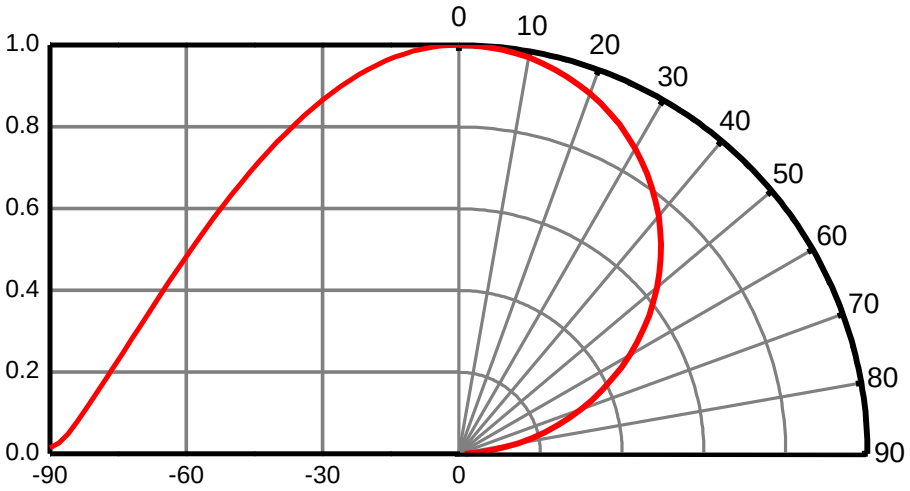
Forward Voltage vs. Substrate Temperature
@ Forward Current = 720mA



Forward Current Derating Curve
@ Junction Temperature <120℃



Typical Diagram Characteristics of Radiation Patterns



Notes:

1. 2θ1/2 is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.
2. Viewing angle tolerance is ± 5◦

Product Labeling

Label Explanation

CPN: Customer Specification (when required)

P/N : Everlight Production Number

QTY: Packing Quantity

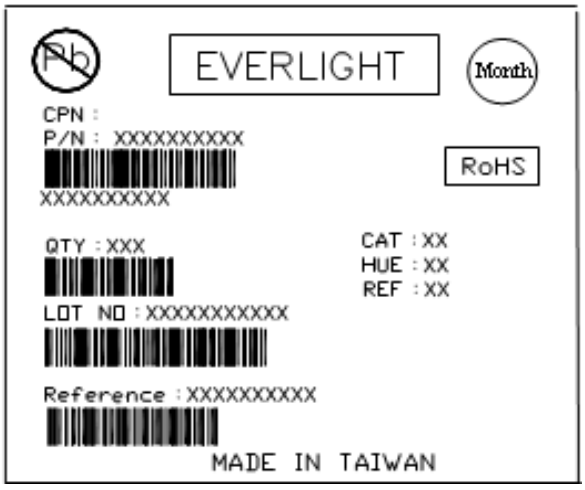
CAT: Luminous Flux (Brightness) Bin

HUE: Color Bin

REF: Forward Voltage Bin

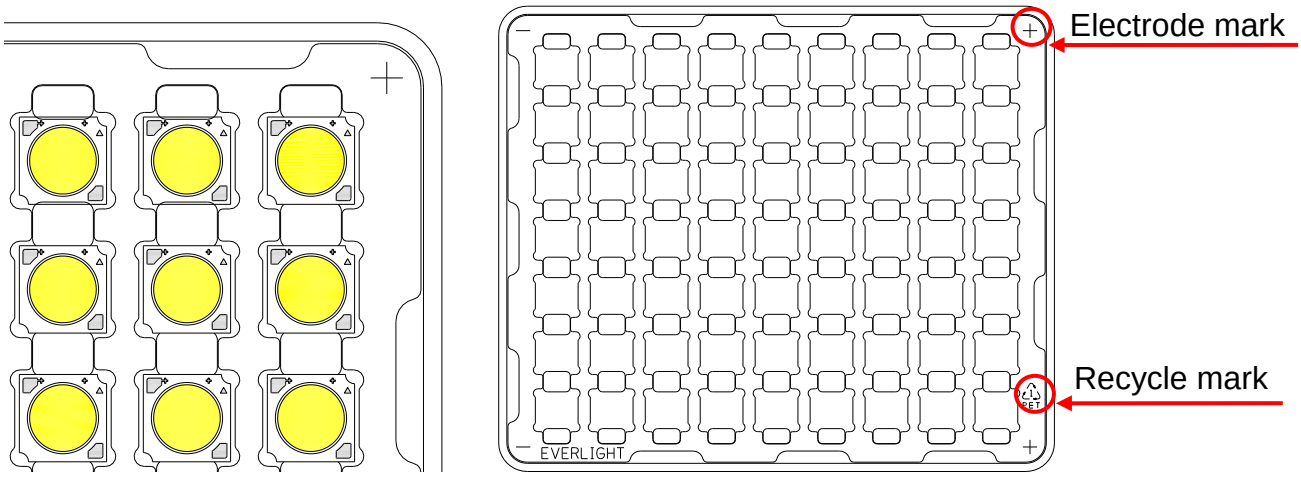
LOT No: Lot Number

MADE IN TAIWAN: Production Place



Carrier Tray Specification

Loaded Quantity:63 PCS Per Tray



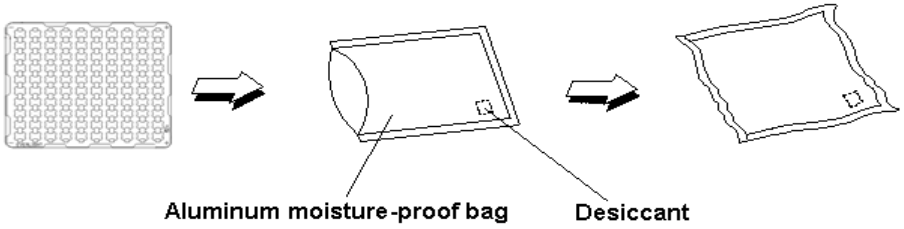
Notes:

1. Dimensions are in millimeters
2. Tolerances unless mentioned are ± 0.1mm

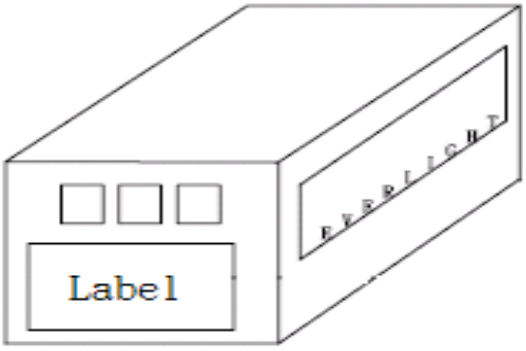
LED Direction

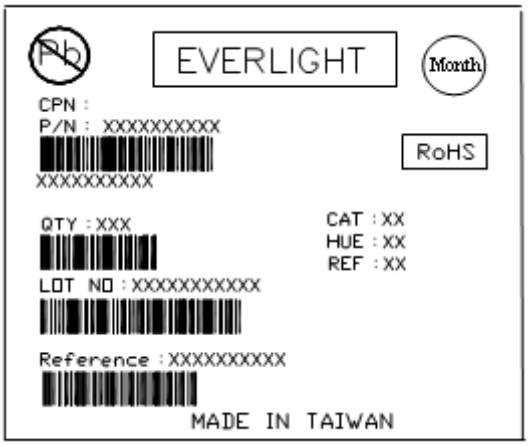
- The **Recycle mark** on the LEDs will be toward the **Anode mark** on the carrier tray.

Moisture Resistant Packaging



Outside Carton





Packaging Quantity

- 63 PCS Per Tray
- 20 Trays Per Outside Carton

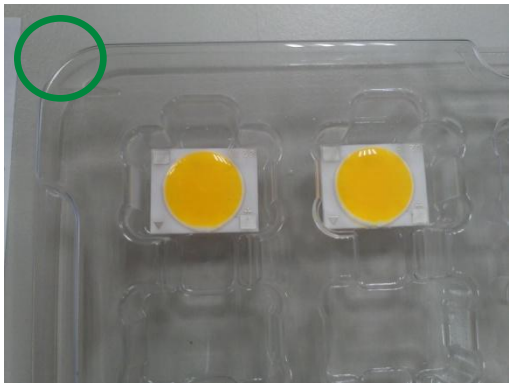
Precautions of Use

Over-Current-Proof

- Though the XUAN1919 has a conducted ESD protection mechanism, customers must not use the device in reverse and should apply resistors for extra protection. Otherwise slight voltage shift may cause significant current changes and burn out failure may happen.

Storage Conditions

- Before the package is opened: The LEDs should be stored at 30°C or less and 50%RH or less after being shipped from Everlight and the storage life limit is 6 months. If the LEDs are stored for 6 months or more, they should be stored in a sealed container with a nitrogen atmosphere and moisture absorbent material.
- After opening the package: The LED should be stored under 30°C or less and 30%RH or less. The LED should be used within 168hrs (7days) after opening the package. If unused LEDs remain, it should be stored in moisture proof packages.
- Do not stack assemblies.

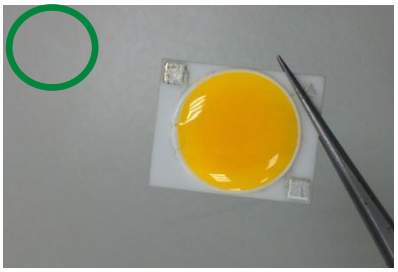


Handling

- Do not put mechanical stress on the LED.
- Never touch the optical surface with finger or sharp object. The LED surface could be soiled or damaged, which could affect the optical performance of the LED.
- In low-humidity work environment, please keep handling the LEDs with appropriate ESD grounding.
- It is recommended to handle the LED with powder-less latex gloves.

Manual Handling

- When handling the product, do not apply direct pressure on the optical surface.
- Do not touch the resin with tweezers to avoid scratching or other damage.



Thermal Management

- Sufficient thermal management must be implemented. Substrate of the positive in temperature must be kept under 85°C at the driving current of 720mA.Otherwise, the junction temperature of die may exceed the limit at high current driving conditions and the LEDs' lifetime may be decrease dramatically.

Revision History

Current version: **2014/05/13**

Previous version: **N/A**

Device No.DHE-000

Rev. Ver. 1

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