

# Acriche Series

## Technical Datasheet for 8WC



Acriche series is designed for AC source operation and high flux output applications.

Acriche is a semi-permanent and environmental Friendly semiconductor lighting that can be used in AC without additional device.

Acriche's thermal management perform exceeds other power LED solutions.

It incorporates state of the art SMD design and Thermal emission material.

Acriche is ideal light sources for general illumination Applications.

### Features

- Connect directly in AC
- Power Saving
- Long Life Time
- Simple BOM
- Miniaturization
- Low thermal resistance
- SMT solderability
- Lead Free product
- RoHS compliant

### Application

- Architectural lighting
- Task lighting
- Decorative / Pathway lighting
- Household appliances

## Part number of Acriche Series

Part Number form : A X<sub>1</sub> X<sub>2</sub> X<sub>3</sub> X<sub>4</sub> X<sub>5</sub>

### 1. Part Number

X <sub>1</sub>	Color
W	Pure White
N	Warm White

X <sub>2</sub>	Acriche Series
1	A1
2	A2

X <sub>3</sub>	LENS Type
0	Flat Type
2	Dome Type
3	Side Type

X <sub>4</sub>	Operating Voltage [V]
0	100
1	110
2	220
3	230

X <sub>5</sub>	Pcb Type
1	4W SPECIALIST
2	4W Connector
3	8W Connector
4	2W

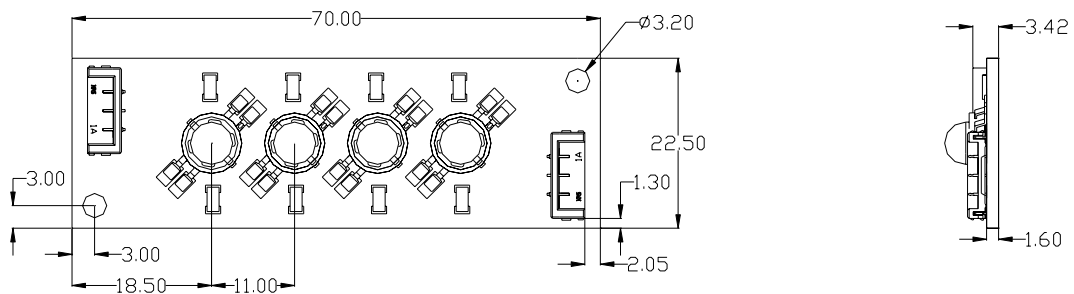
### 2. Part Number of 8WC

Part number	Operating voltage	Operating current
AX2203	100V [RMS]	80 mA[RMS]
AX2213	110V [RMS]	80 mA[RMS]
AX2223	220V [RMS]	40 mA[RMS]
AX2233	230V [RMS]	40 mA[RMS]

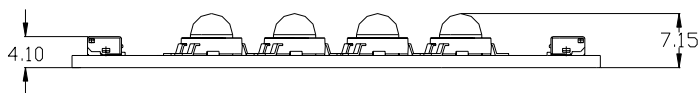
## Outline Dimensions

### 1. AX2203, AX2213

<TOP VIEW>



<SIDE VIEW>



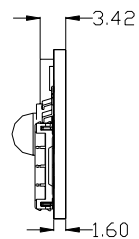
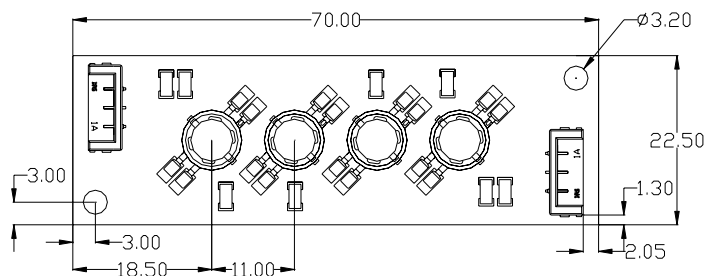
Notes :

1. All dimensions are in millimeters.
2. Scale : none
3. This drawing without tolerances are for reference only
4. Slug of package isn't connected to anode or cathode

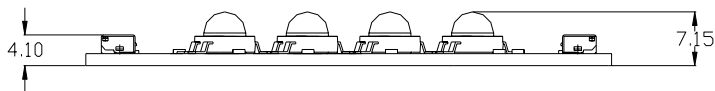
## Outline Dimensions

### 2. AX2223, AX2223

<TOP VIEW>



<SIDE VIEW>



Notes :

1. All dimensions are in millimeters.
2. Scale : none
3. This drawing without tolerances are for reference only
4. Slug of package isn't connected to anode or cathode

## Characteristics for Acriche

### 1. Pure white-AW2203, AW2213, AW2223, AW2233

1-1 Electro-Optical characteristics at 100V/110V/220V/230V RMS,  $T_A=25^{\circ}\text{C}$

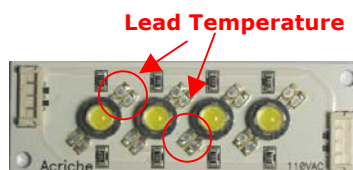
Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	-	290	-	lm
Illuminance <sup>[3]</sup>	$\Phi_l$		330		lx
Correlated Color Temperature <sup>[4]</sup>	CCT	-	6500	-	K
CRI	$R_a$	-	70	-	-
Operating Current	$I_{opt}$	-	40/80	-	mA[RMS]
Power Dissipation	$P_D$	8			W
Operating Frequency	Freq	50 / 60			Hz
View Angle	$2\theta$ 1/2	117			deg.

### 1-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Operating Voltage	$V_{opt}$ <sup>[5]</sup>	115/127/253/265	V [RMS]
Power Dissipation	$P_D$	15	W
Junction Temperature	$T_j$	125	$^{\circ}\text{C}$
Operating Temperature	$T_{opr}$	-30 ~ +85	$^{\circ}\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +120	$^{\circ}\text{C}$
ESD Sensitivity	-	$\pm 2,000\text{V}$ HBM	-

\*Notes :

- [1] Acriche series maintains a tolerance of  $\pm 10\%$  on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Illuminance is measured at 50cm distance
- [4] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.  
CCT  $\pm 5\%$  tester tolerance
- [5] 'Operating Voltage' doesn't indicate the maximum voltage which customers use, but it means tolerable voltage according to the voltage variation rate by one's country.  
It is recommended that the temperature of lead frame should be below  $70^{\circ}\text{C}$ .



## Characteristics for Acriche

### 2. Warm white-AN2203, AN2213, AN2223, AN2233

2-1 Electro-Optical characteristics at 100V/110V/220V,230V RMS,  $T_A=25^{\circ}\text{C}$

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	-	235	-	lm
Illuminance <sup>[3]</sup>	$\Phi_l$		265		lx
Correlated Color Temperature <sup>[4]</sup>	CCT	-	3000	-	K
CRI	$R_a$	-	70	-	-
Operating Current	$I_{opt}$	-	40/80	-	mA[RMS]
Power Dissipation	$P_D$	8			W
Operating Frequency	Freq	50 / 60			Hz
View Angle	$2\theta$ 1/2	110			deg.

#### 2-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Operating Voltage	$V_{opt}$ <sup>[5]</sup>	115/127/253/265	V [RMS]
Power Dissipation	$P_D$	15	W
Junction Temperature	$T_j$	125	$^{\circ}\text{C}$
Operating Temperature	$T_{opr}$	-30 ~ +85	$^{\circ}\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +120	$^{\circ}\text{C}$
ESD Sensitivity	-	$\pm 2,000\text{V}$ HBM	-

\*Notes :

- [1] Acriche series maintains a tolerance of  $\pm 10\%$  on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Illuminance is measured at 50cm distance
- [4] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.  
CCT  $\pm 5\%$  tester tolerance
- [5] 'Operating Voltage' doesn't indicate the maximum voltage which customers use, but it means tolerable voltage according to the voltage variation rate by one's country.  
It is recommended that the temperature of lead frame should be below  $70^{\circ}\text{C}$ .

## Characteristics for Acriche

### 3. Warm white(CRI80)–AN2203, AN2213, AN2223, AN2233

3-1 Electro-Optical characteristics at 100V/110V/220V,230V RMS, T<sub>A</sub>=25°C

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux <sup>[1]</sup>	$\Phi_V$ <sup>[2]</sup>	-	200	-	lm
Illuminance <sup>[3]</sup>	$\Phi_l$		230		lx
Correlated Color Temperature <sup>[4]</sup>	CCT	-	3000	-	K
CRI	R <sub>a</sub>	-	80	-	-
Operating Current	I <sub>opt</sub>	-	40/80	-	mA[RMS]
Power Dissipation	P <sub>D</sub>	8			W
Operating Frequency	Freq	50 / 60			Hz
View Angle	2 $\theta$ 1/2	110			deg.

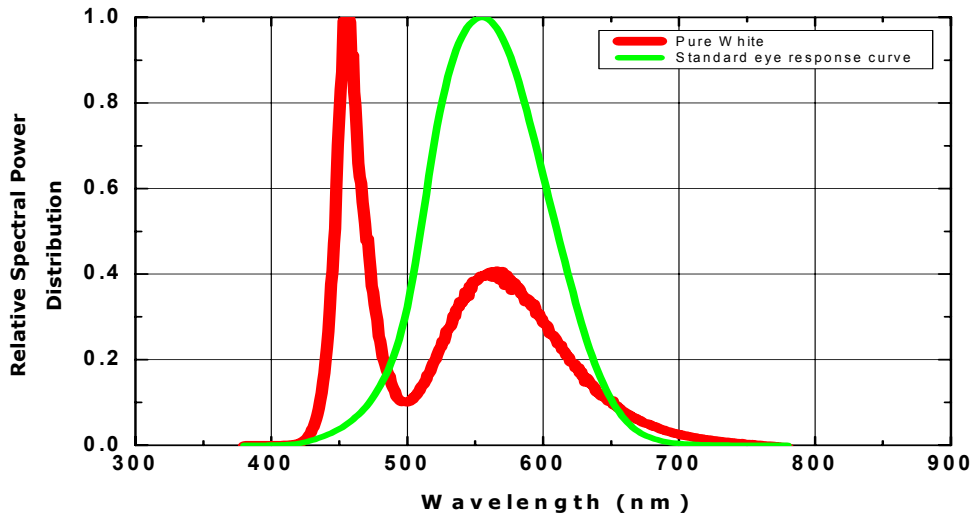
#### 3-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Operating Voltage	V <sub>opt</sub> <sup>[5]</sup>	115/127/253/265	V [RMS]
Power Dissipation	P <sub>D</sub>	15	W
Junction Temperature	T <sub>j</sub>	125	°C
Operating Temperature	T <sub>opr</sub>	-30 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +120	°C
ESD Sensitivity	-	±2,000V HBM	-

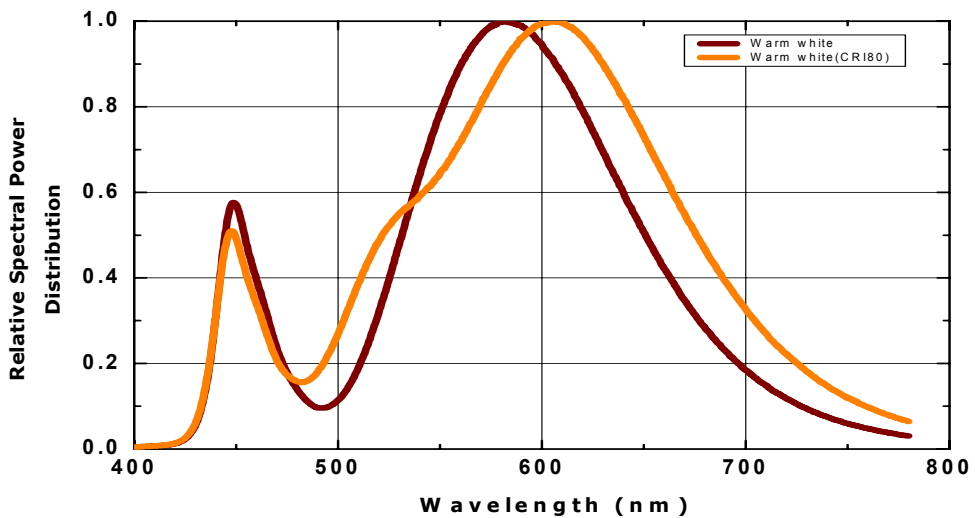
\*Notes :

- [1] Acriche series maintains a tolerance of ±10% on flux and power measurements.
- [2]  $\Phi_V$  is the total luminous flux output as measured with an integrated sphere.
- [3] Illuminance is measured at 50cm distance
- [4] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.  
CCT ±5% tester tolerance
- [5] 'Operating Voltage' doesn't indicate the maximum voltage which customers use, but it means tolerable voltage according to the voltage variation rate by one's country.  
It is recommended that the temperature of lead frame should be below 70 °C.

### 1. Pure White



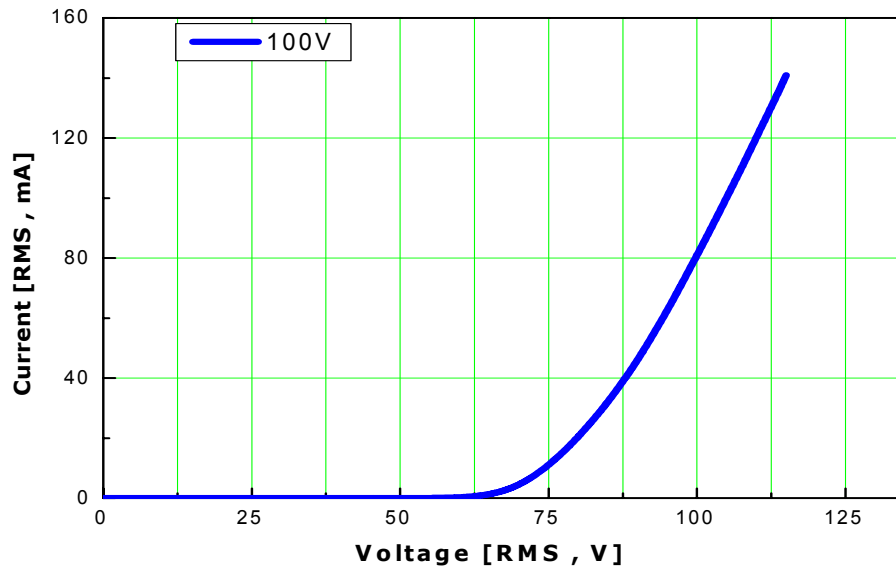
### 2. Warm white



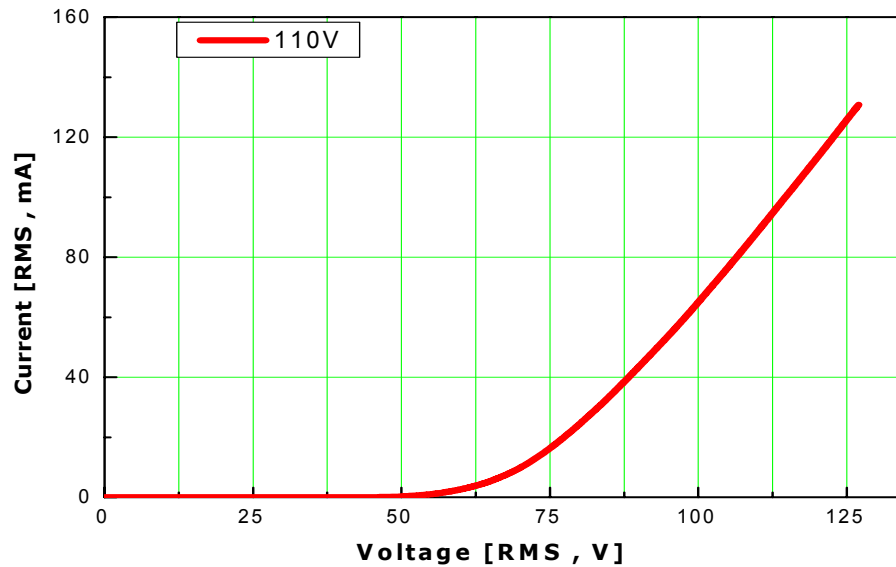


## Electrical Characteristics

### 1-1. Current[RMS] vs Voltage[RMS] $T_A=25^\circ\text{C}$ - 100V

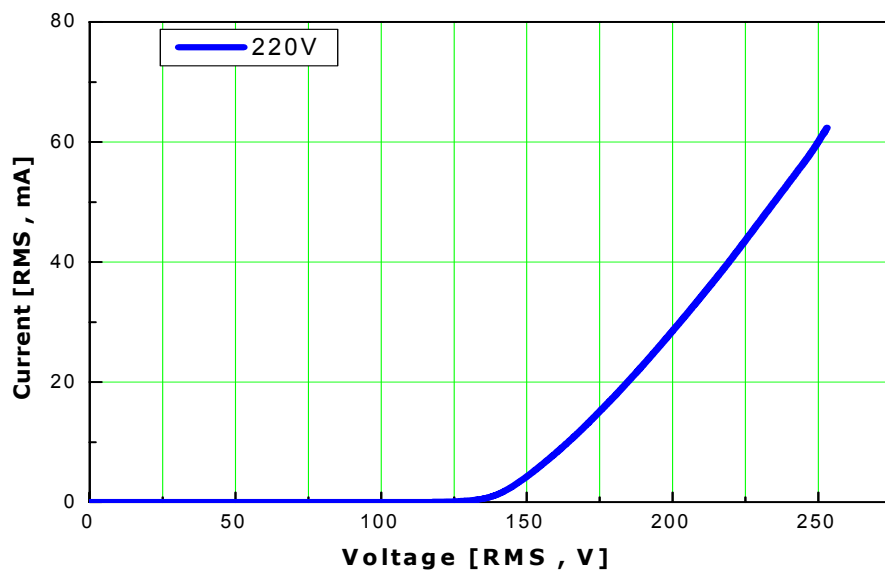


### 1-2. Current[RMS] vs Voltage[RMS] $T_A=25^\circ\text{C}$ - 110V

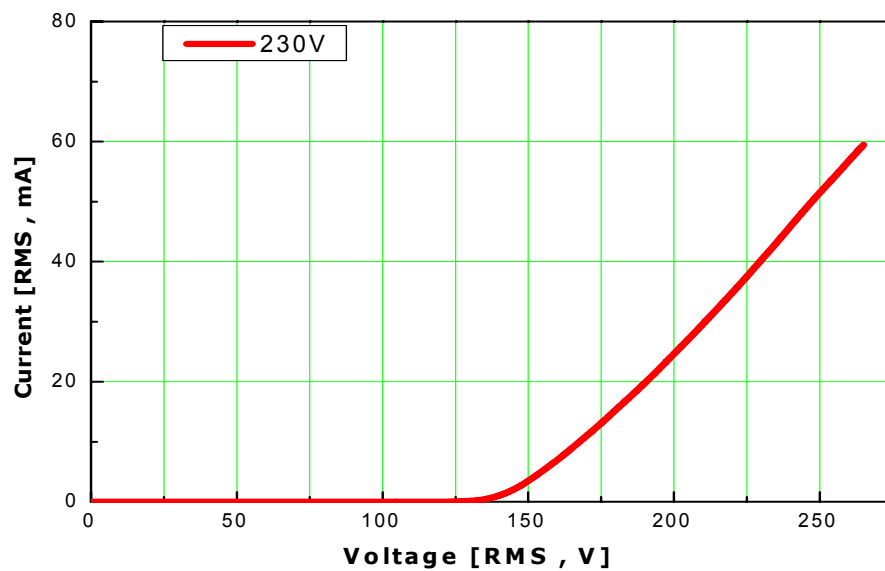


## Electrical Characteristics

### 1-3. Current[RMS] vs Voltage[RMS] $T_A=25^\circ\text{C}$ - 220V

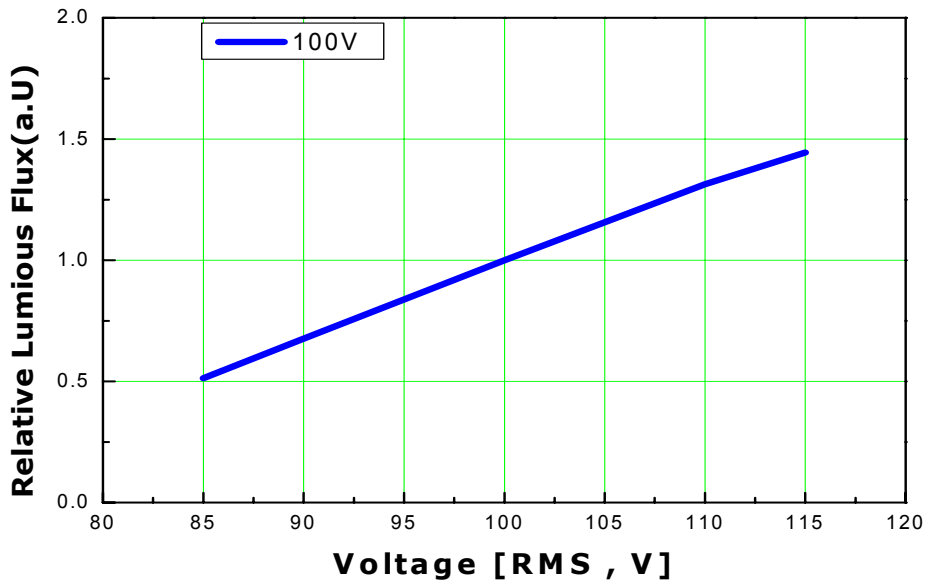


### 1-4. Current[RMS] vs Voltage[RMS] $T_A=25^\circ\text{C}$ - 230V

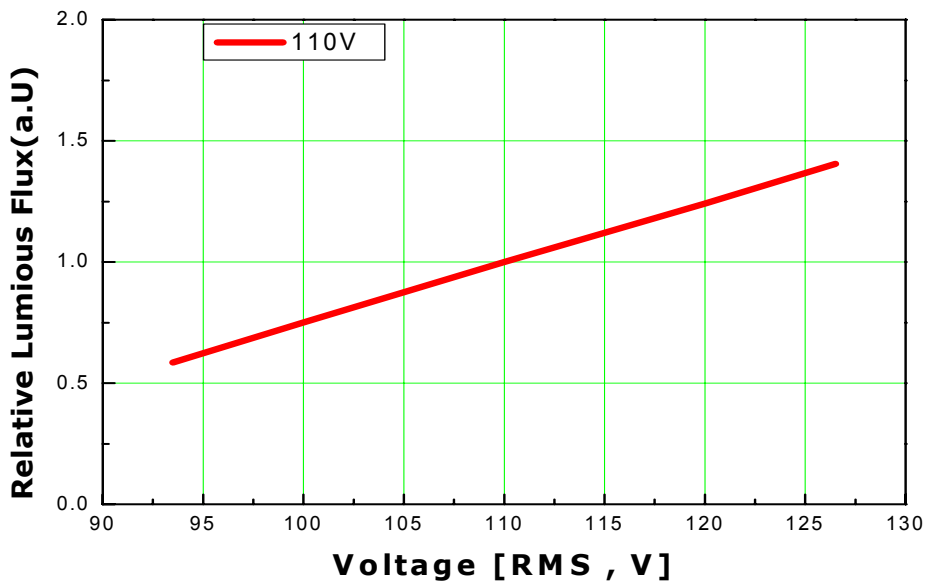


## Electrical Characteristics

### 2-1. Voltage[RMS] vs. Normalized Relative Luminous Flux, $T_A=25^{\circ}\text{C}$ -100V

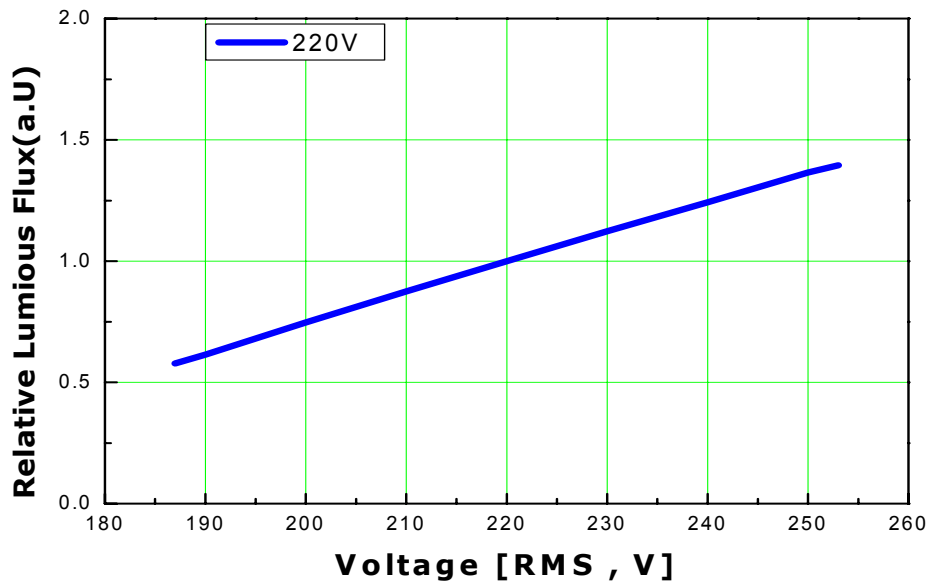


### 2-2. Voltage[RMS] vs. Normalized Relative Luminous Flux, $T_A=25^{\circ}\text{C}$ -110V

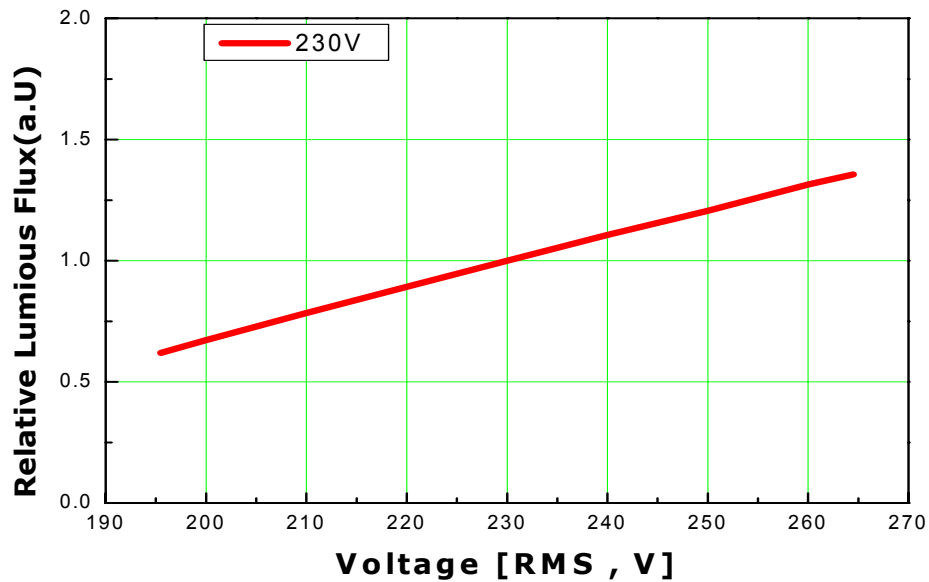


## Electrical Characteristics

### 2-3. Voltage[RMS] vs. Normalized Relative Luminous Flux, $T_A=25^{\circ}\text{C}$ -220V

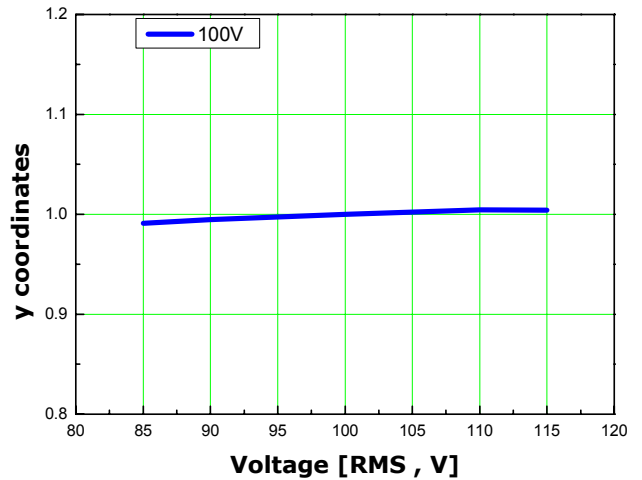
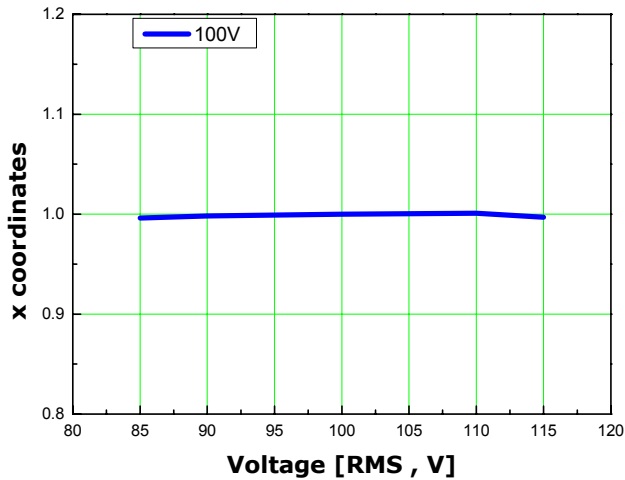


### 2-4. Voltage[RMS] vs. Normalized Relative Luminous Flux, $T_A=25^{\circ}\text{C}$ -230V

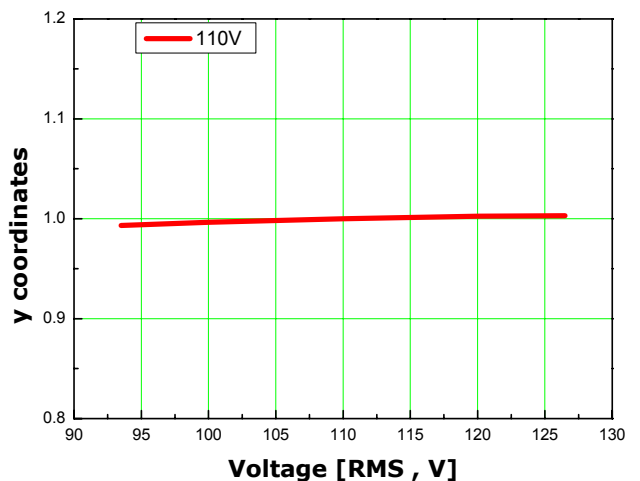
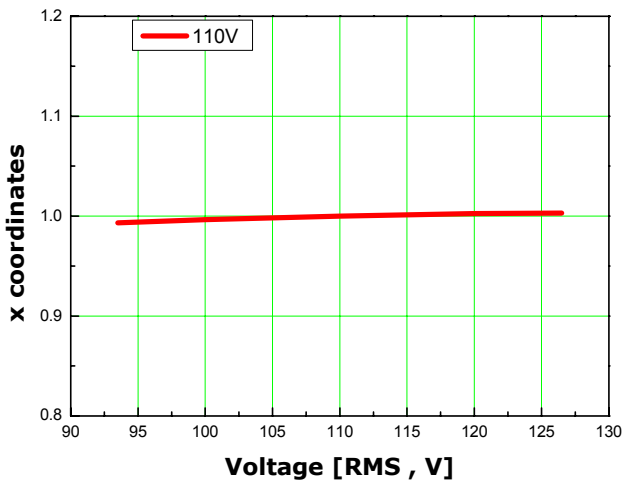


## Electrical Characteristics

### 3-1. Voltage[RMS] vs. XY Coordinate Shift, $T_A=25^\circ\text{C}$ -100V

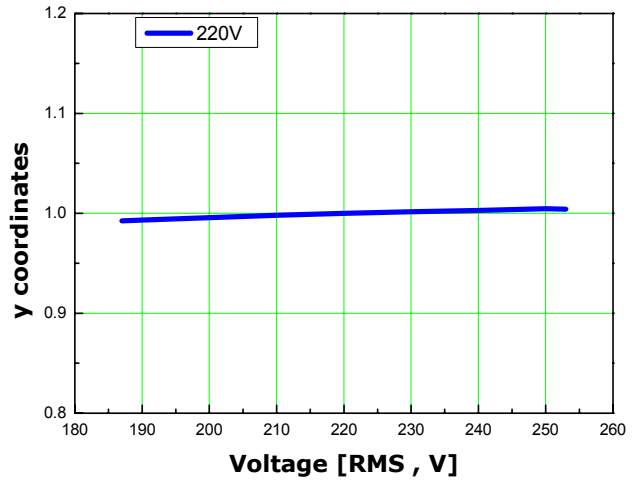
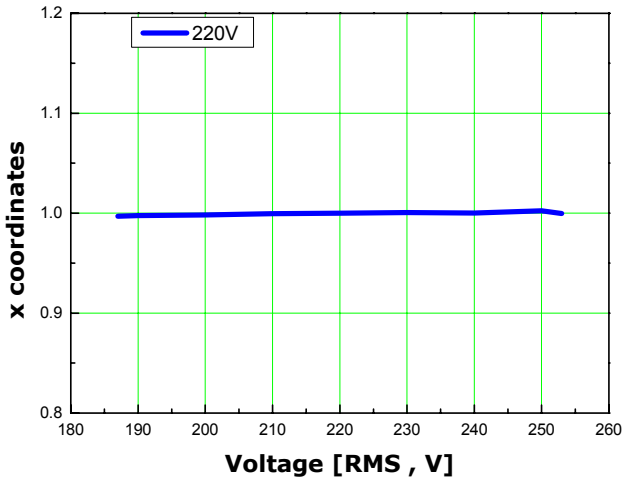


### 3-2. Voltage[RMS] vs. XY Coordinate Shift, $T_A=25^\circ\text{C}$ -110V

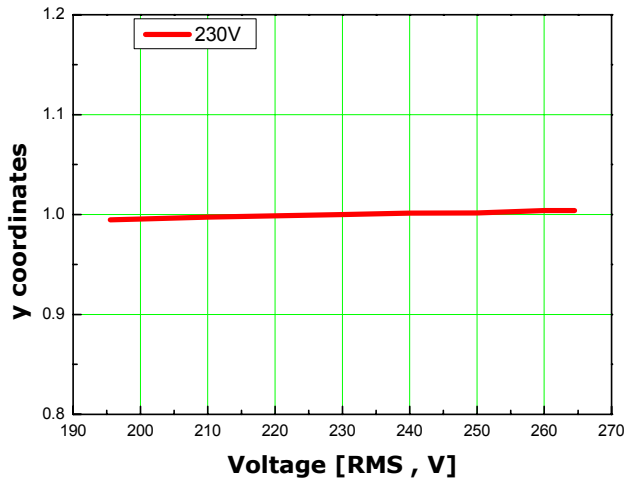
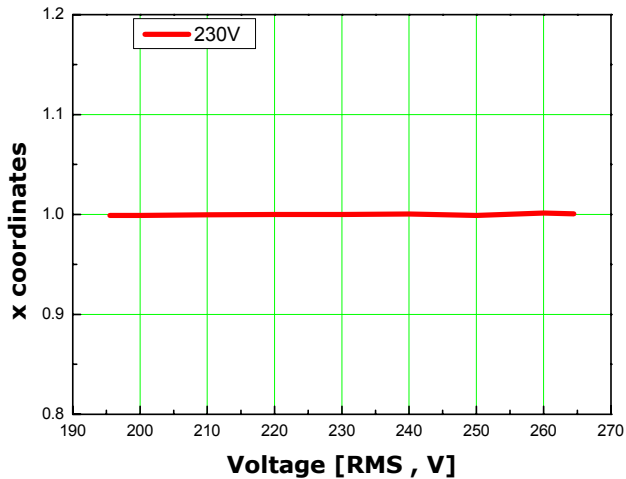


## Electrical Characteristics

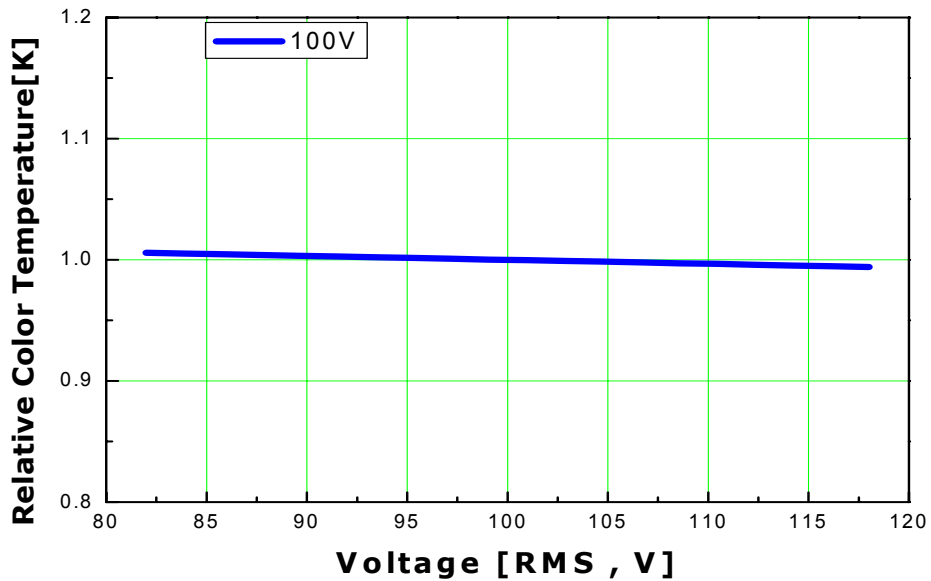
### 3-3. Voltage[RMS] vs. XY Coordinate Shift, $T_A=25^\circ\text{C}$ -220V



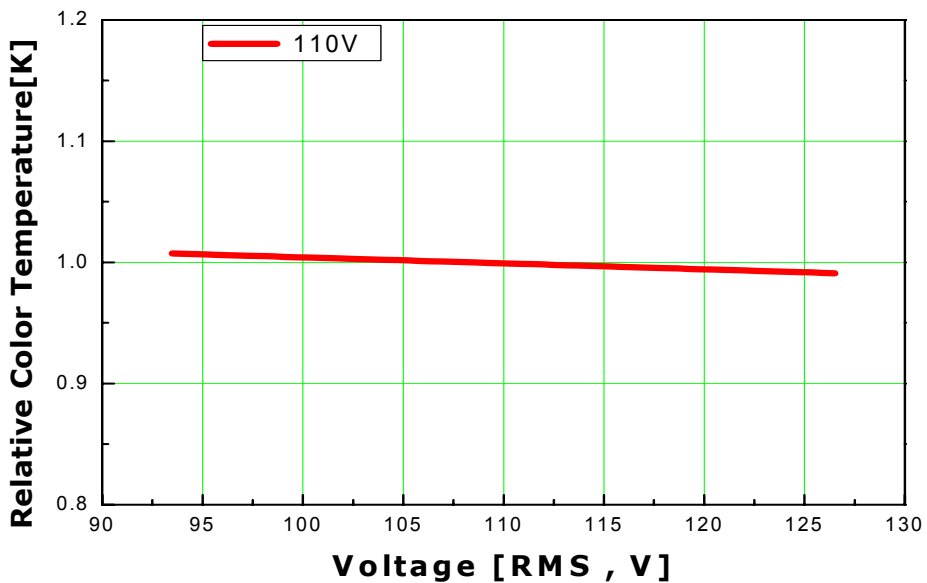
### 3-4. Voltage[RMS] vs. XY Coordinate Shift, $T_A=25^\circ\text{C}$ -230V



4-1. Voltage[RMS] vs. Color Temperature Shift,  $T_A=25^\circ\text{C}$  -100V

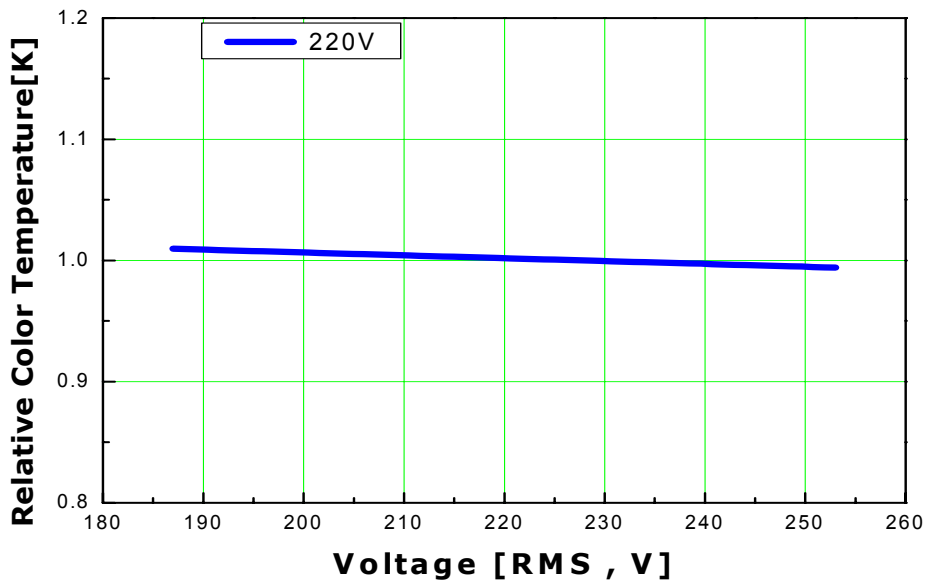


4-2. Voltage[RMS] vs. Color Temperature Shift,  $T_A=25^\circ\text{C}$  -110V

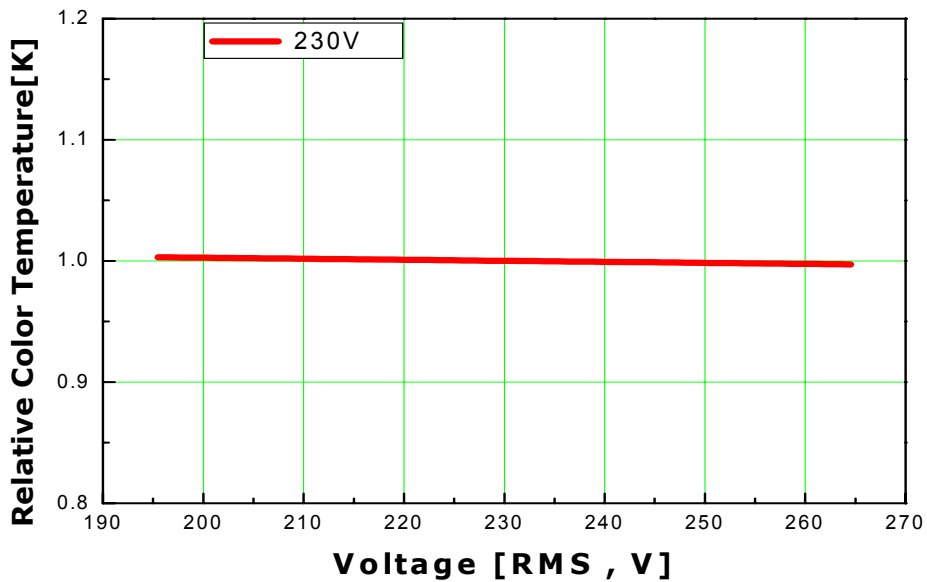


## Electrical Characteristics

### 4. Voltage[RMS] vs. Color Temperature Shift, $T_A=25^\circ\text{C}$ -220V

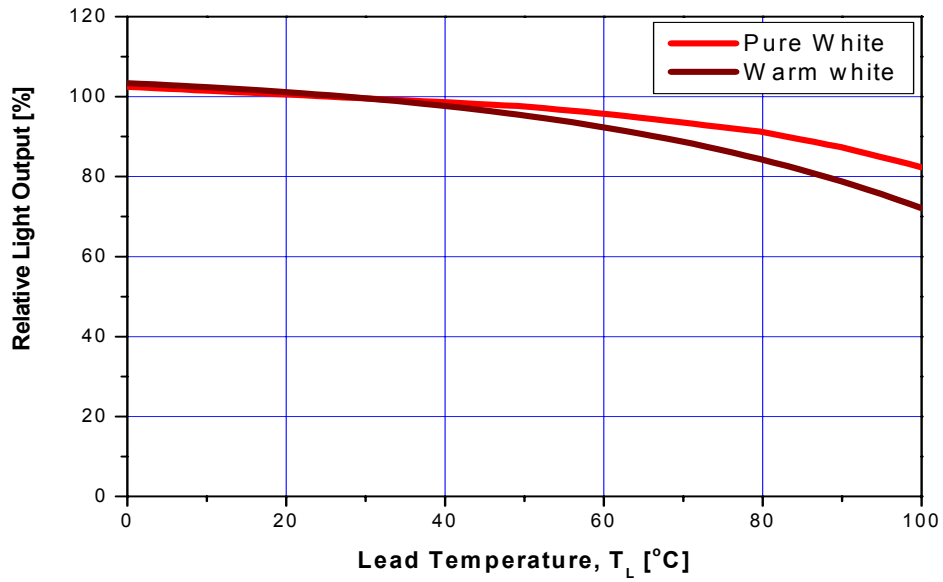


### 4. Voltage[RMS] vs. Color Temperature Shift, $T_A=25^\circ\text{C}$ -230V



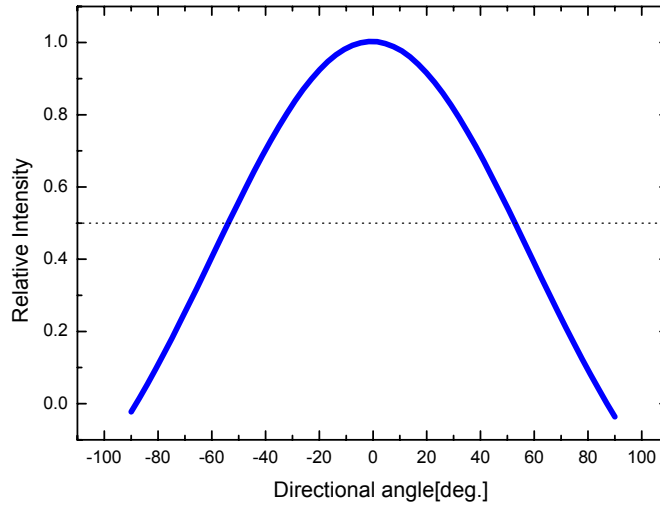


## Light Output Characteristics

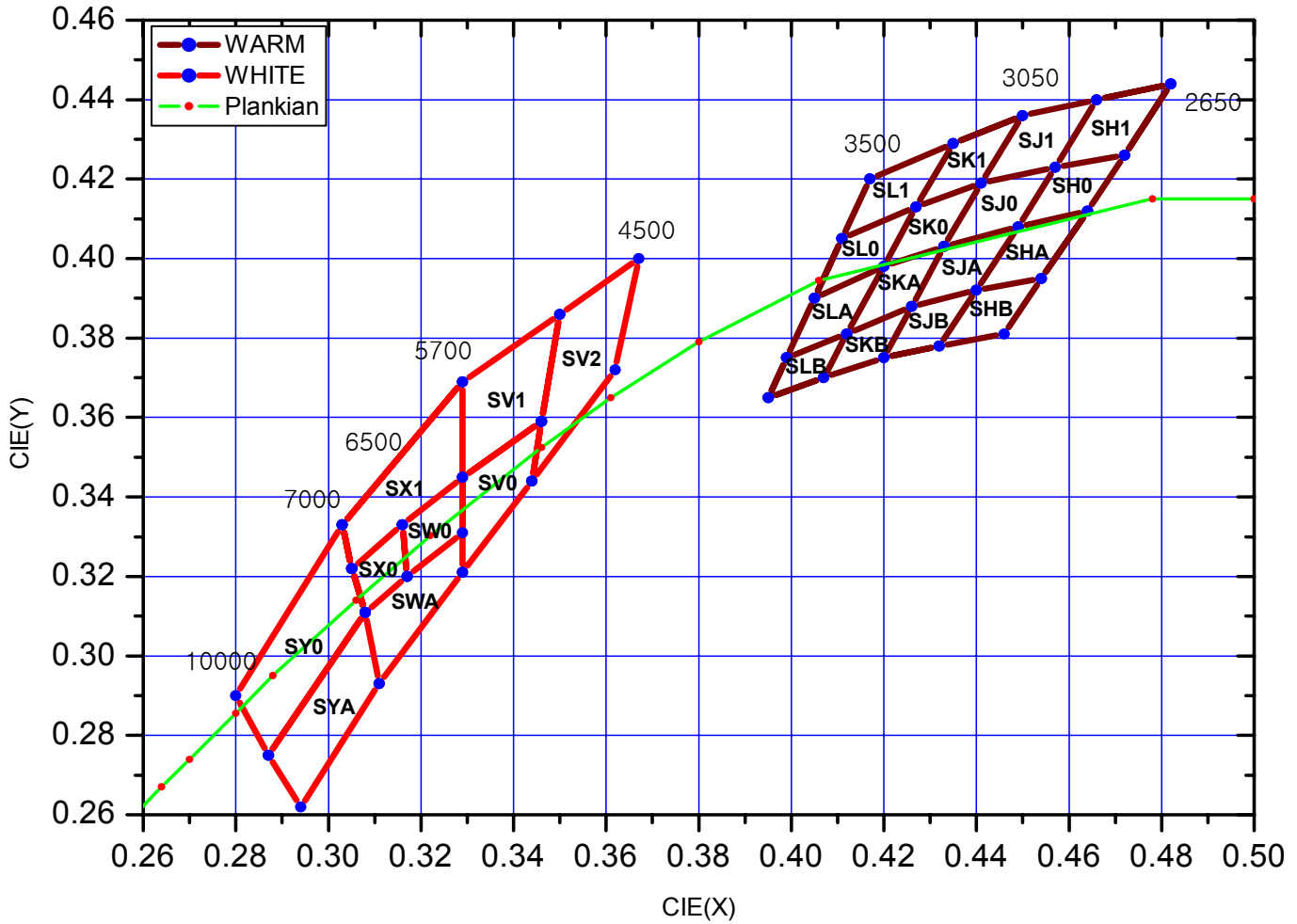


## Typical Dome Type Radiation pattern

### 1. Pure White, Warm White



## Acriche Binning structure graphical representation



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## Precaution for use

Acriche series run on high voltage such as 110 V or 220 V.

- Please don't touch the PCB surface, which has built-in terminals and chips, with your hands or metals, while Acriche series is running..
- Please don't add or change wires,while Acriche series is running.

## Handling of Silicone resin LEDs

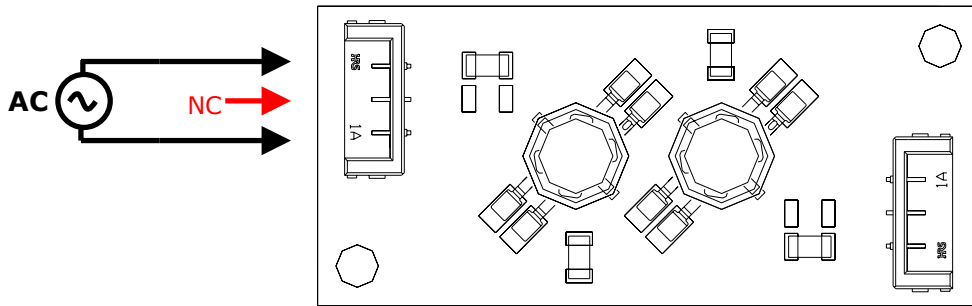
Acriche series is encapsulated by silicone resin for the highest flux efficiency.

Notes for handling of Silicone resin Acriche series

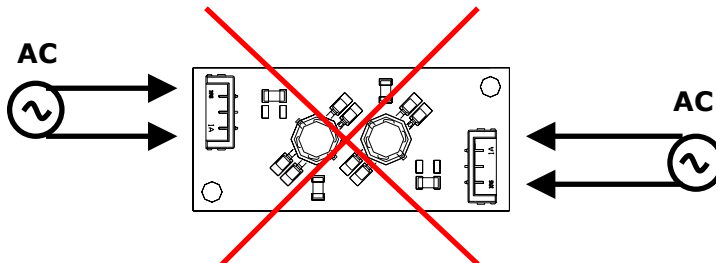
- Avoid touching silicone resin parts especially by sharp tools such as Pincette(Tweezers)
- Avoid leaving fingerprints on silicone resin parts.
- Dust sensitivity silicone resin need containers having cover for storage.
- When populating boards in SMT production, there are basically no restrictions regarding the form of the pick and place nozzle, except that mechanical pressure on the surface of the resin must be prevent.
- Please do not force over 2000 gf impact or pressure diagonally on the silicon lens. It will cause fatal damage of this product
- Please do not recommend to cover the silicone resin of the Acriche series with other resin (epoxy, urethane, etc)

## How to connect wire

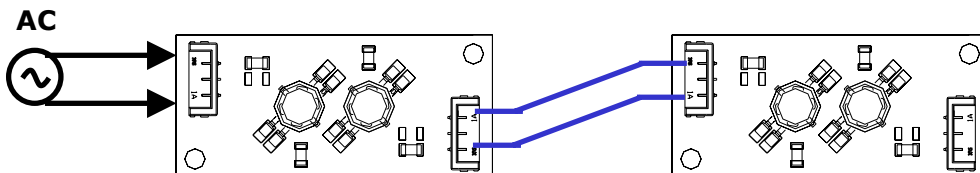
- To operate Acriche product, connect AC Source to Pin1 and Pin3
- Pin2 isn't used (NC : No connect)



- Do not input AC POWER to both connectors at once



- The second connector uses for connection with another Acriche products (parallel)



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