Preliminary

SEOUL SEMICONDUCTOR

Acriche Series

Technical Datasheet for Specialist

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 solderbility
- 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_1 X_2 X_3 X_4 X_5

1. Part Number

X_1	Color
W	Pure White
N	Warm White

X_2	Acriche Series
1	A1
2	A2

X_3	LENS Type
0	Flat Type
2	Dome Type
3	Side Type

X_4	Operating Voltage [V]
0	100
1	110
2	220
3	230

X_5	Pcb Type
1	4W SPECIALIST
2	4W Connector
3	8W Connector
4	2W

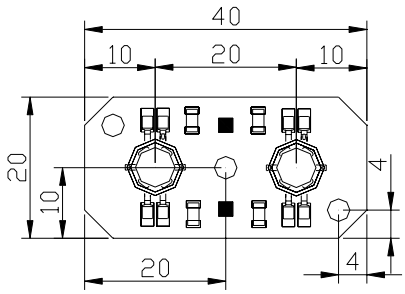
2. Part Number of 4WS

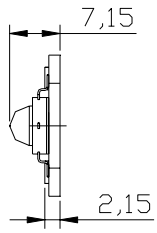
Part number	Operating voltage	Operating current
AX2201	100V [RMS]	40 mA[RMS]
AX2211	110V [RMS]	40 mA[RMS]
AX2221	220V [RMS]	20 mA[RMS]
AX2231	230V [RMS]	20 mA[RMS]

Outline Dimensions

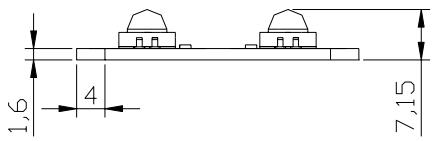
1. AX2201, AX2211

<TOP VIEW>





<SIDE VIEW>



■ ELECTRODE

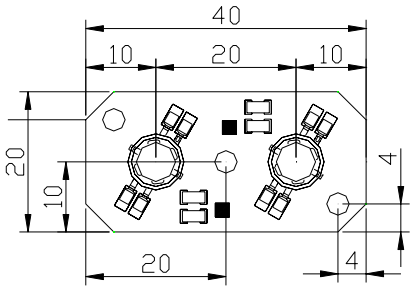
Notes :

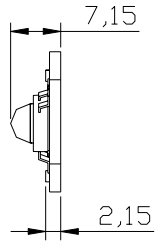
1. All dimensions are in millimeters.
2. Scale : none
3. This drawing without tolerances are for reference only
4. Slug of package has no polarity

Outline Dimensions

2. AX2221, AX2231

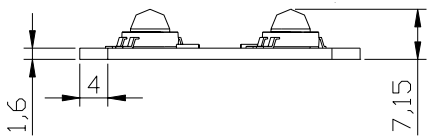
<TOP VIEW>





<SIDE VIEW>

■ ELECTRODE



Notes :

1. All dimensions are in millimeters.
2. Scale : none
3. This drawing without tolerances are for reference only
4. Slug of package has no polarity

Characteristics for Acriche

1. Pure white-AW2201, AW2211, AW2221, AW2231

1-1 Electro-Optical characteristics at 100V/110V/220V/230V RMS, T_A=25ºC

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux [1]	Φ_V [2]	-	150	-	lm
Illuminance [3]	Φ_I		175		lx
Correlated Color Temperature [4]	CCT	-	6500	-	K
CRI	R_a	-	70	-	-
Operating Current	I_{opt}	-	20/40	-	mA[RMS]
Power Dissipation	P_D	4			W
Operating Frequency	Freq	50 / 60			Hz
View Angle	2Θ 1/2	110			deg.

1-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Operating Voltage	v_{opt} [5]	127/115/253/265	V [RMS]
Power Dissipation	P_D	7.5	W
Junction Temperature	T_j	125	ºC
Operating Temperature	T_{opr}	-30 ~ +85	ºC
Storage Temperature	T_{stg}	-40 ~ +120	ºC
ESD Sensitivity	-	±2,000V HBM	-

*Notes :

[1] Acriche series maintains a tolerance of ±10% on flux and power measurements.

[2] Φ_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 ℃.

2. Warm white-AN2201, AN2211, AN2221, AN2231

2-1 Electro-Optical characteristics at 100V/110V/220V/230V RMS, T_A=25ºC

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux [1]	Φ_V [2]	-	120	-	lm
Illuminance [3]	Φ_I		140		lx
Correlated Color Temperature [4]	CCT	-	3000	-	K
CRI	R_a	-	70	-	-
Operating Current	I_{opt}	-	20/40	-	mA[RMS]
Power Dissipation	P_D	4			W
Operating Frequency	Freq	50 / 60			Hz
View Angle	2Θ 1/2	110			deg.

2-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Operating Voltage	v_{opt} [5]	115/127/253/265	V [RMS]
Power Dissipation	P_D	7.5	W
Junction Temperature	T_j	125	ºC
Operating Temperature	T_{opr}	-30 ~ +85	ºC
Storage Temperature	T_{stg}	-40 ~ +120	ºC
ESD Sensitivity	-	±2,000V HBM	-

*Notes :

[1] Acriche series maintains a tolerance of ±10% on flux and power measurements.

[2] Φ_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 ℃.

3. Warm white(CRI80)-AN2201, AN2211, AN2221, AN2231

3-1 Electro-Optical characteristics at 100V/110V/220V/230V RMS, T_A=25ºC

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux [1]	Φ_V [2]	-	105	-	lm
Illuminance [3]	Φ_I		122		lx
Correlated Color Temperature [4]	CCT	-	3000	-	K
CRI	R_a	-	80	-	-
Operating Current	I_{opt}	-	20/40	-	mA[RMS]
Power Dissipation	P_D	4			W
Operating Frequency	Freq	50 / 60			Hz
View Angle	2Θ 1/2	110			deg.

3-2 Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Operating Voltage	v_{opt} [5]	115/127/253/265	V [RMS]
Power Dissipation	P_D	7.5	W
Junction Temperature	T_j	125	ºC
Operating Temperature	T_{opr}	-30 ~ +85	ºC
Storage Temperature	T_{stg}	-40 ~ +120	ºC
ESD Sensitivity	-	±2,000V HBM	-

*Notes :

[1] Acriche series maintains a tolerance of ±10% on flux and power measurements.

[2] Φ_V is the total luminous flux output as measured with an integrated sphere.

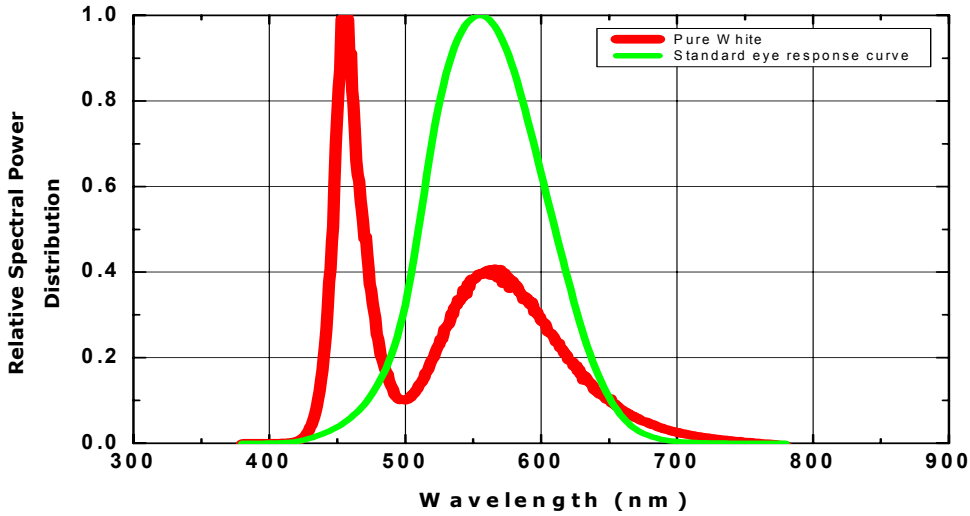
[3] Illuminance is measured at 50cm distance

[4] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram. CCT ±5% tester tolerance

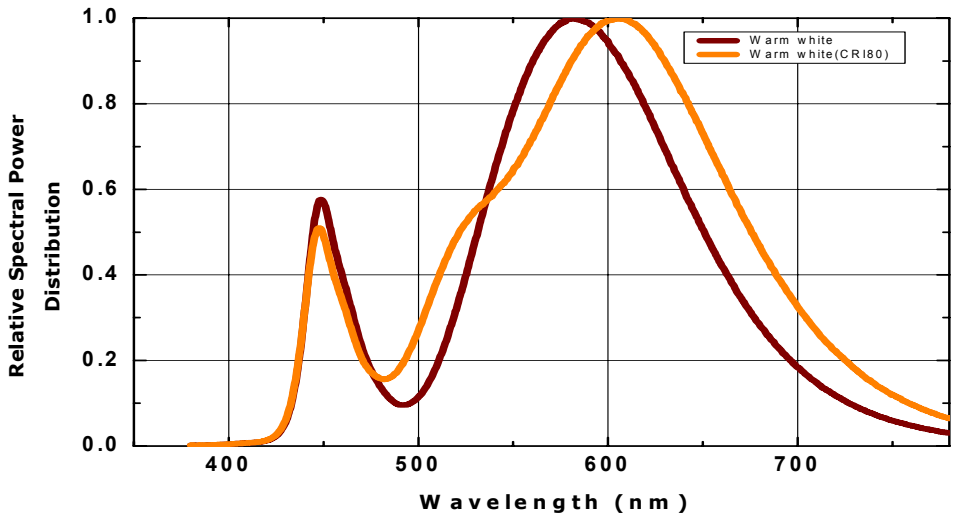
[5] 'Operating Voltage' doesn't indicate the maximum voltage which customers use, but it means tolerable voltage according to the voltage variation rate by one's country. It is recommended that the temperature of lead frame should be below 70 ℃.

Color spectrum, T_A=25ºC

1. Pure White

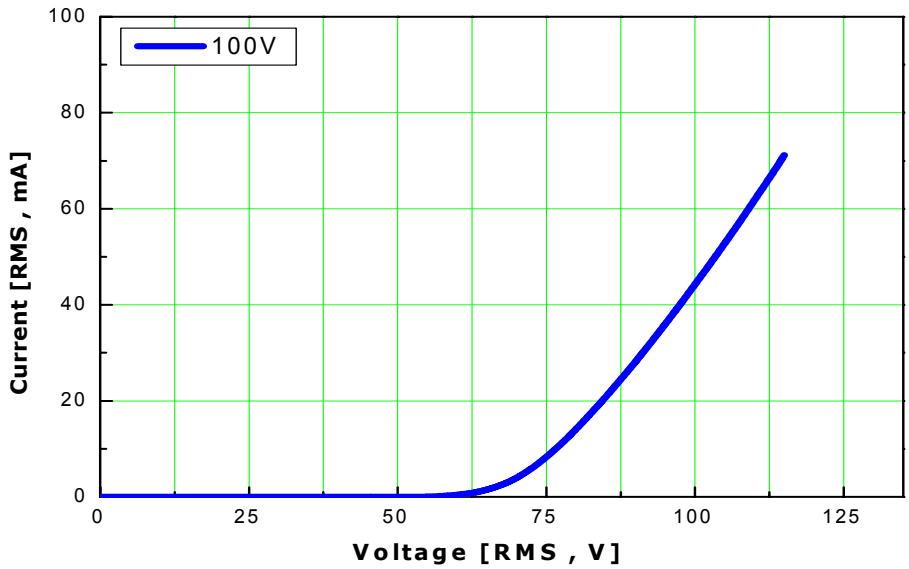


2. Warm white

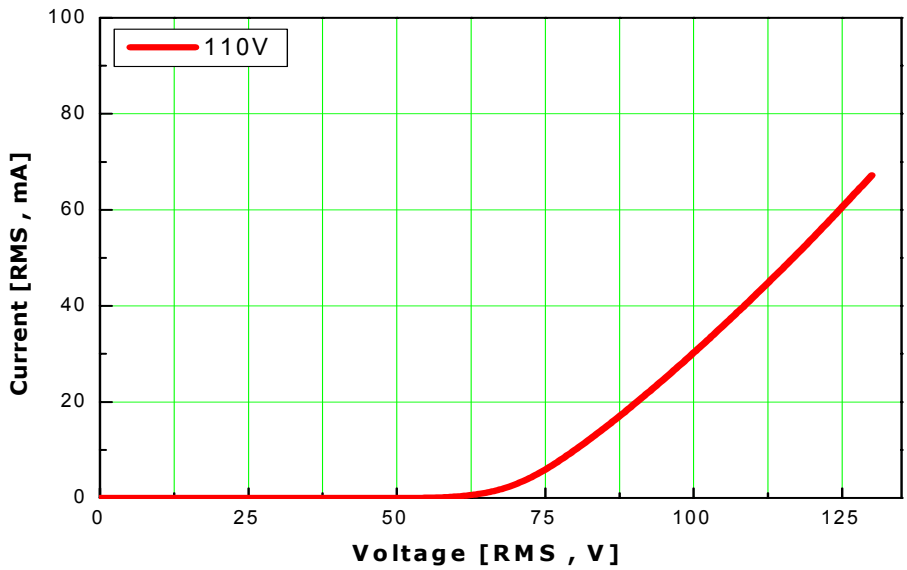


Electrical Characteristics

1. Current[RMS] vs Voltage[RMS] T_A=25℃ - 100V

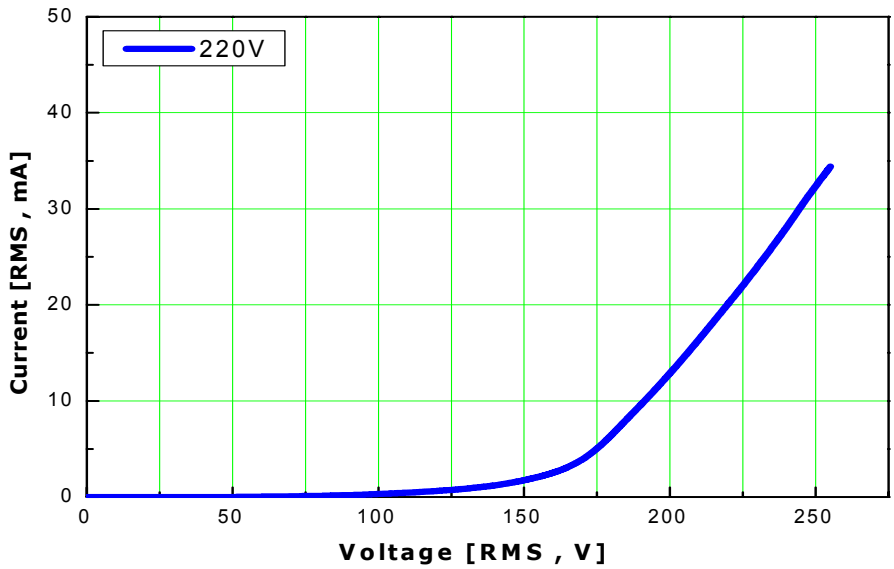


1. Current[RMS] vs Voltage[RMS] T_A=25℃ - 110V

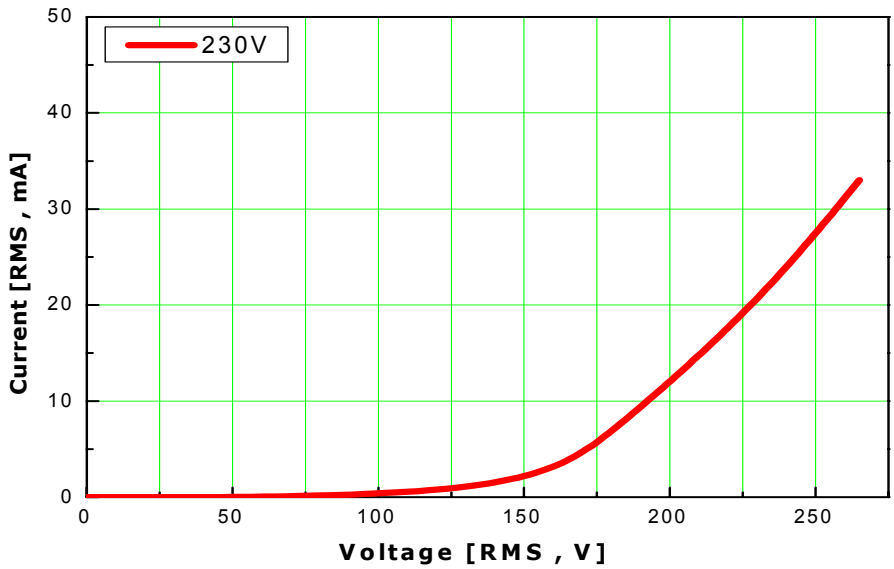


Electrical Characteristics

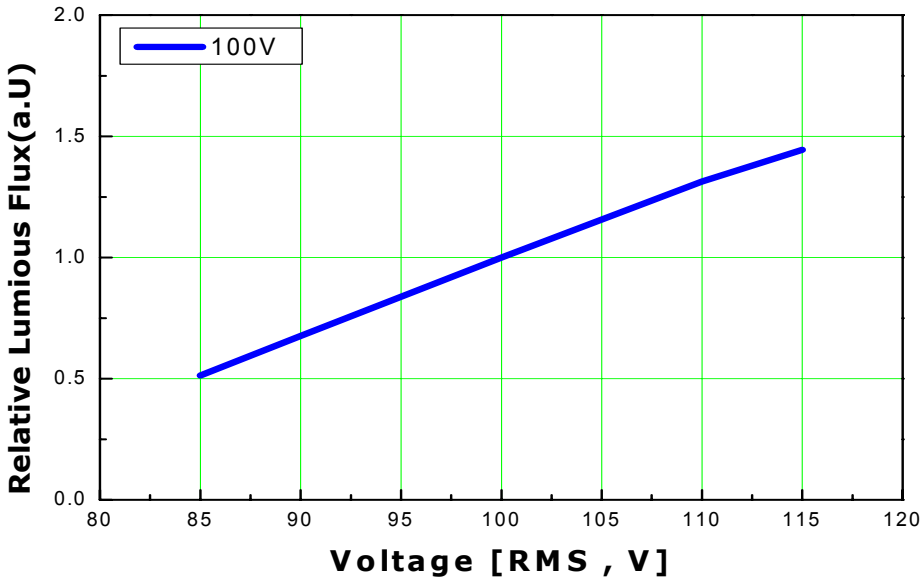
1. Current[RMS] vs Voltage[RMS] T_A=25℃ - 220V



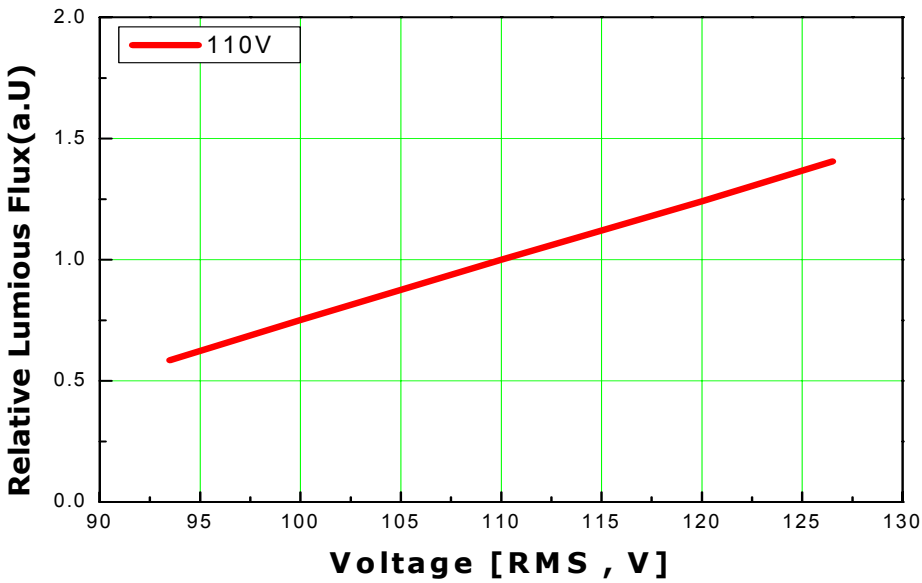
1. Current[RMS] vs Voltage[RMS] T_A=25℃ - 230V



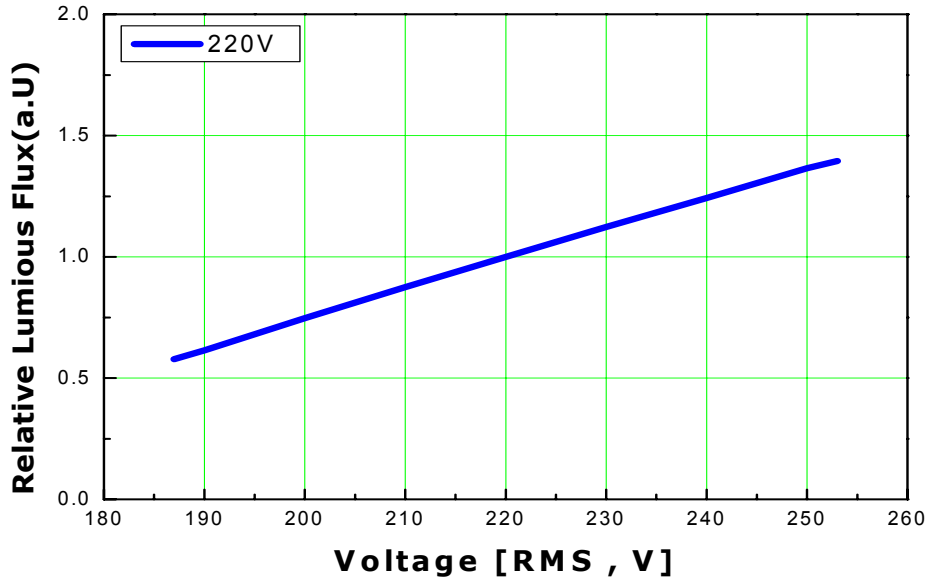
2. Voltage[RMS] vs. Normalized Relative Luminous Flux, T_A=25℃ -100V



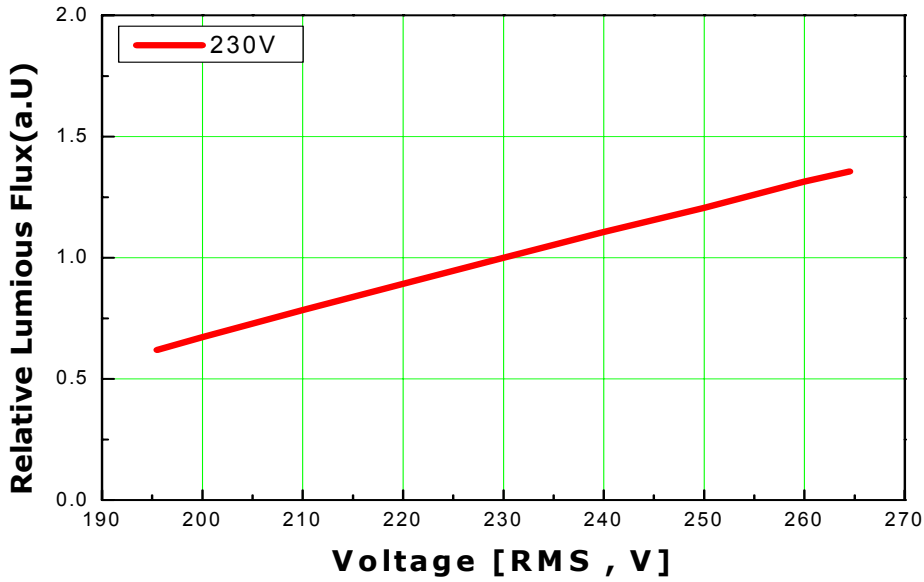
2. Voltage[RMS] vs. Normalized Relative Luminous Flux, T_A=25℃ -110V



2. Voltage[RMS] vs. Normalized Relative Luminous Flux, T_A=25℃ -220V

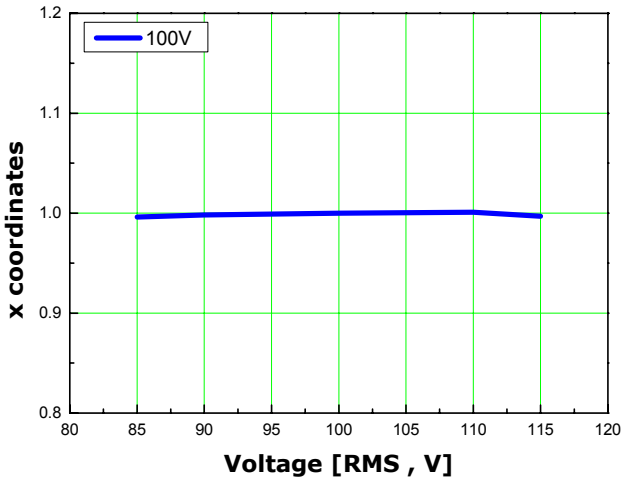


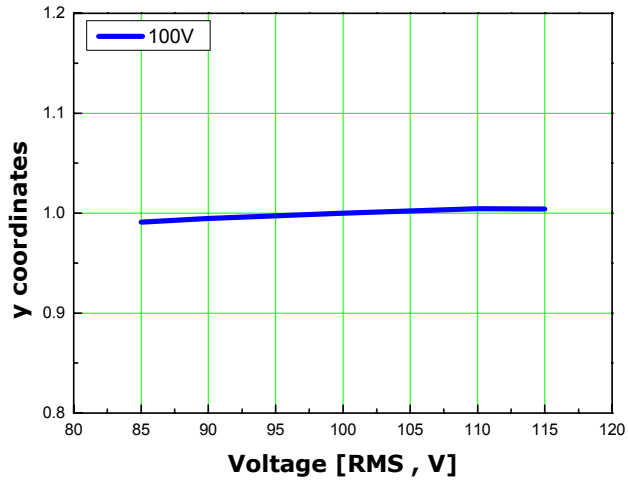
2. Voltage[RMS] vs. Normalized Relative Luminous Flux, T_A=25℃ -230V



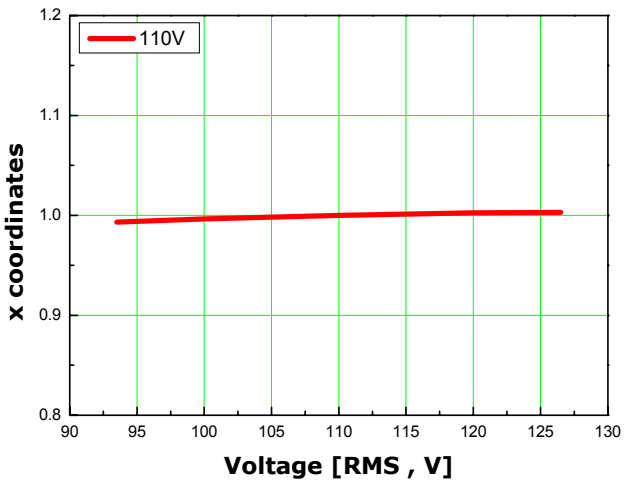
Electrical Characteristics

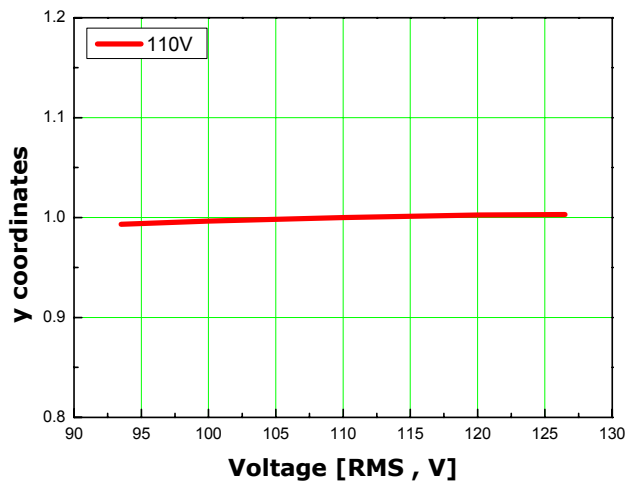
3. Voltage[RMS] vs. XY Coordinate Shift, T_A=25℃ -100V





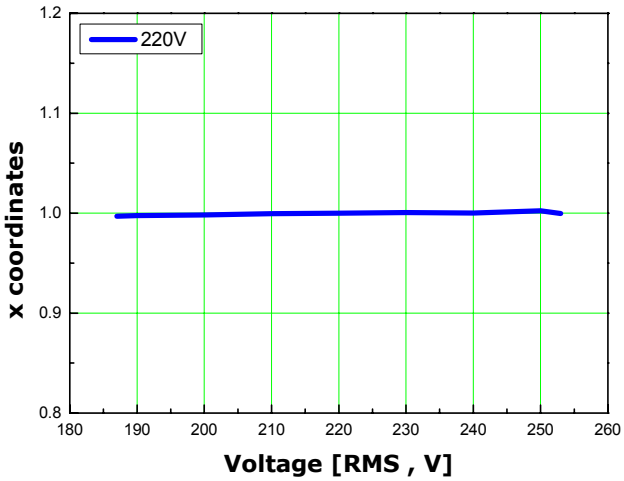
3. Voltage[RMS] vs. XY Coordinate Shift, T_A=25℃ -110V

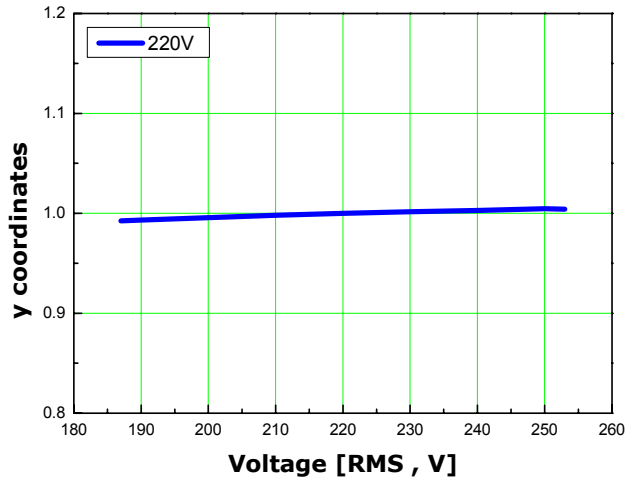




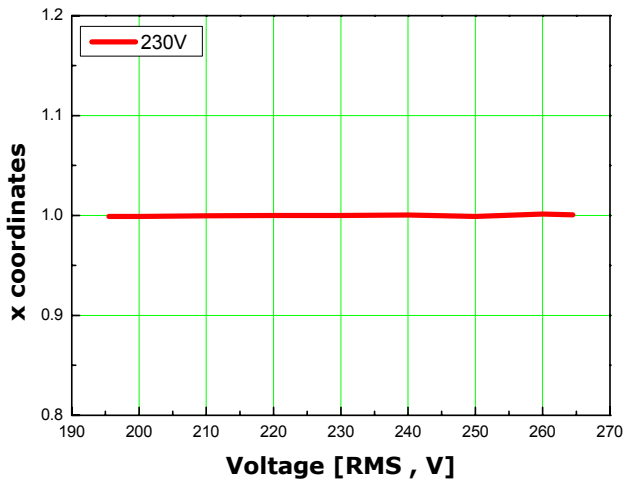
Electrical Characteristics

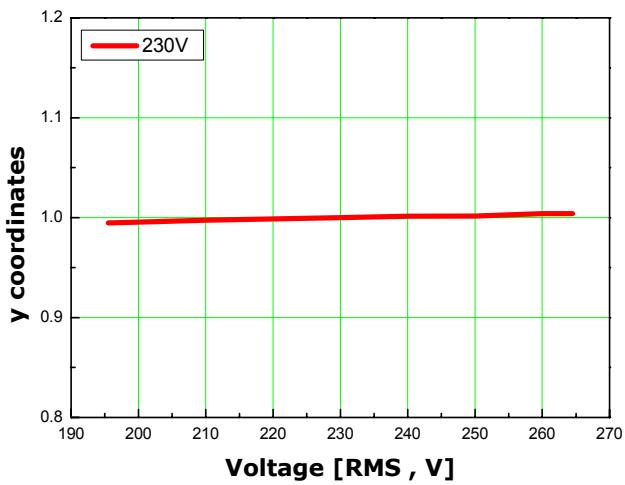
3. Voltage[RMS] vs. XY Coordinate Shift, T_A=25℃ -220V





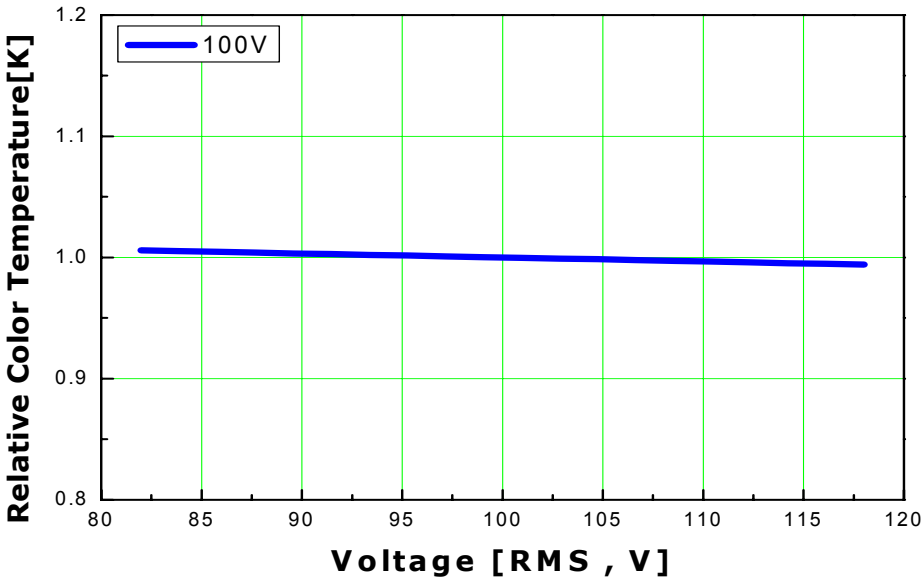
3. Voltage[RMS] vs. XY Coordinate Shift, T_A=25℃ -230V



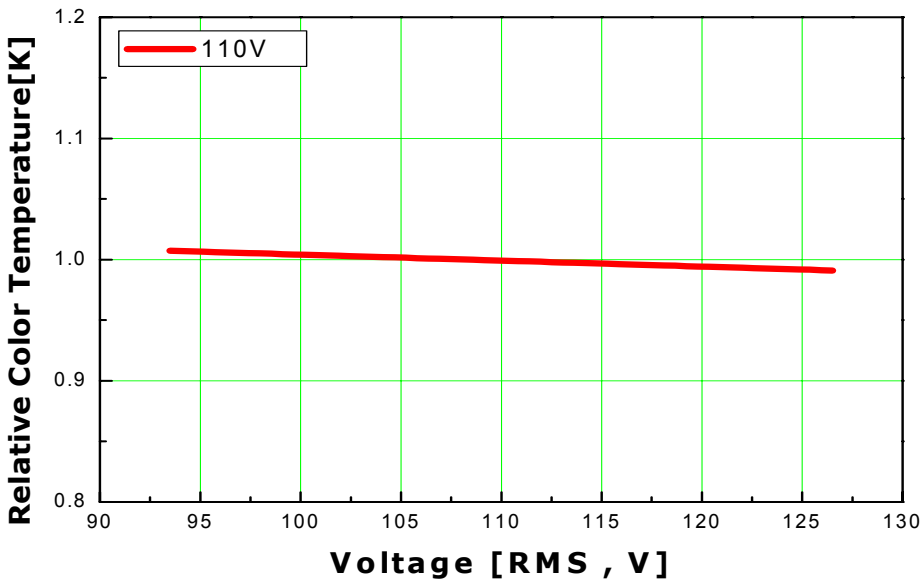


Electrical Characteristics

4. Voltage[RMS] vs. Color Temperature Shift, T_A=25℃ -100V

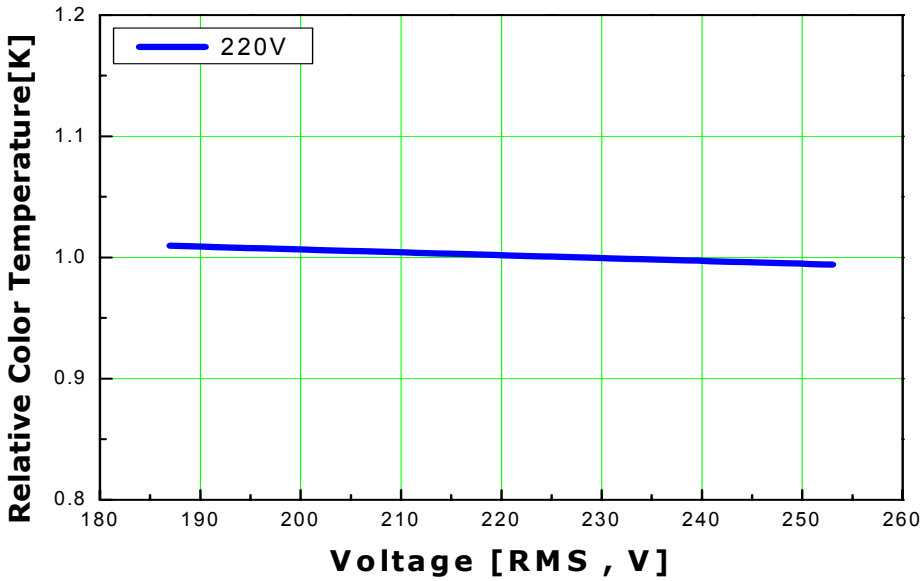


4. Voltage[RMS] vs. Color Temperature Shift, T_A=25℃ -110V

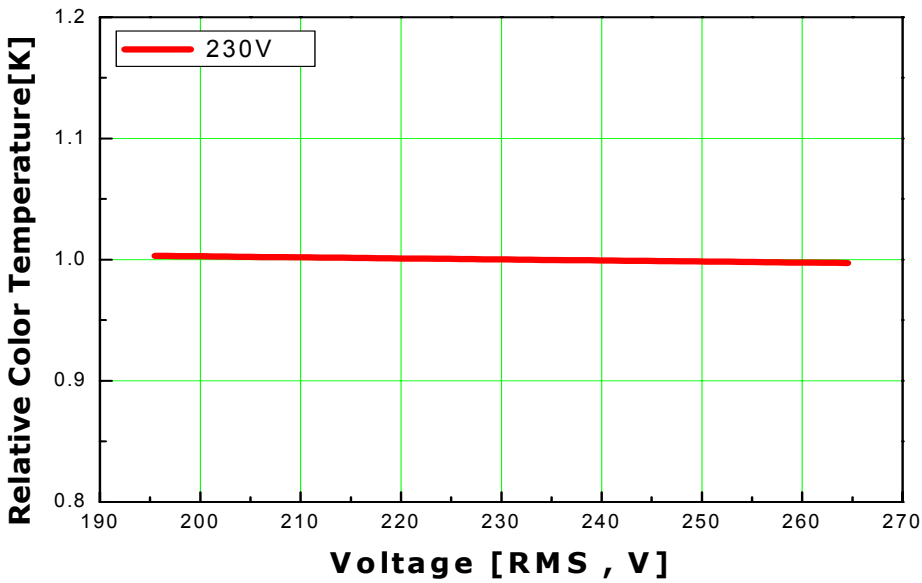


Electrical Characteristics

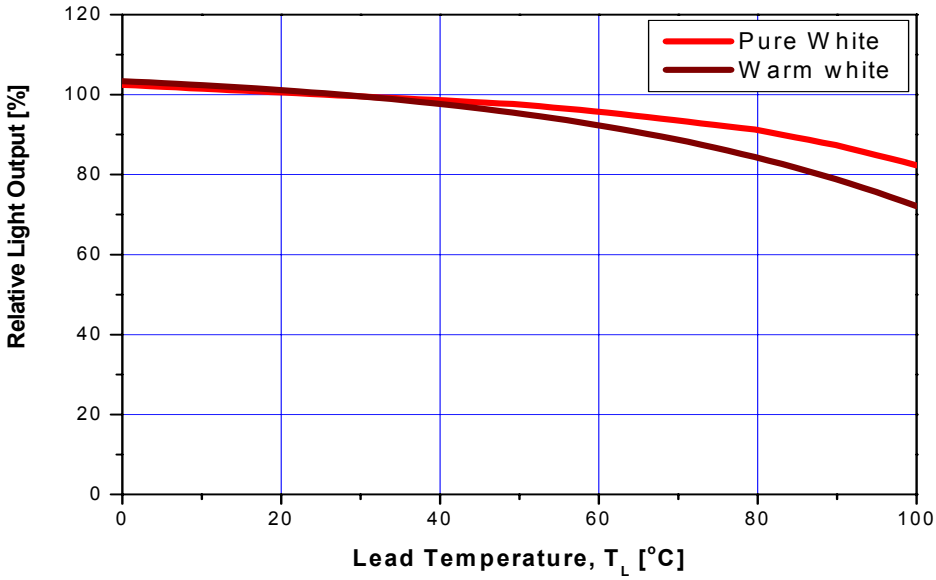
4. Voltage[RMS] vs. Color Temperature Shift, T_A=25℃ -220V



4. Voltage[RMS] vs. Color Temperature Shift, T_A=25℃ -230V

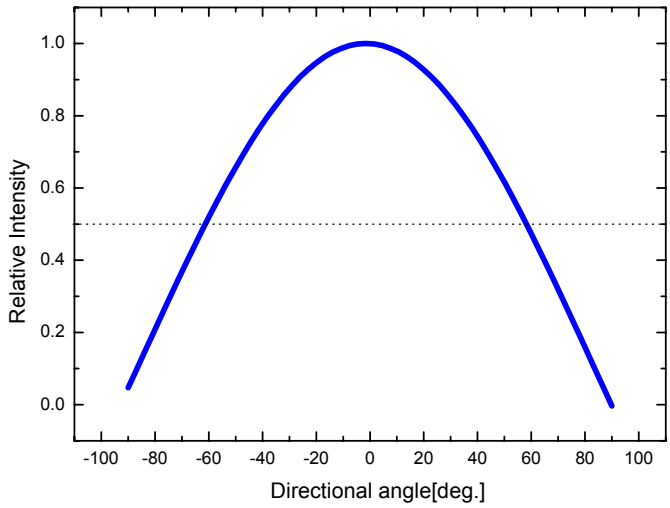


Light Output Characteristics

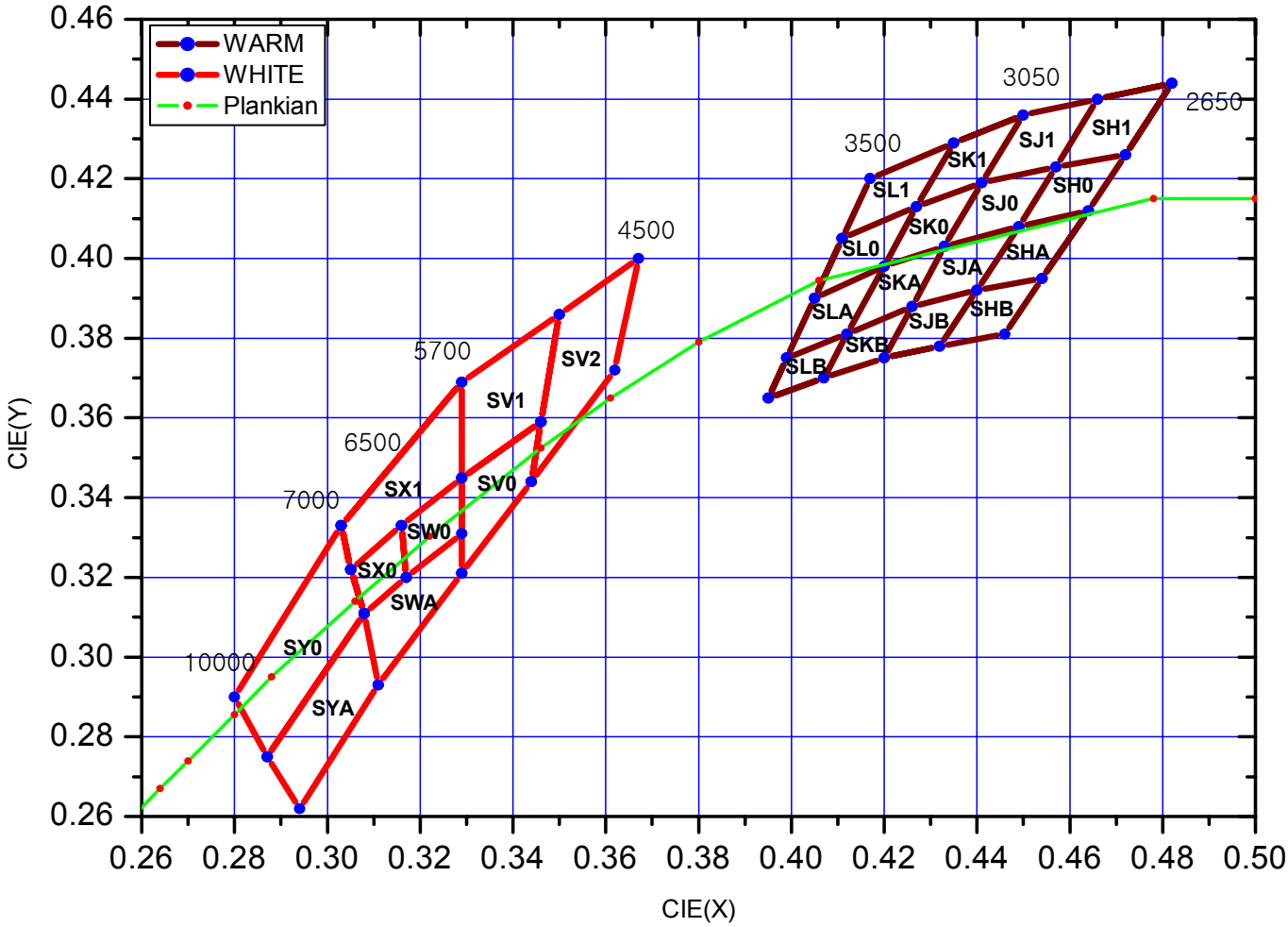


Typical Dome Type Radiation pattern

1. Pure White



Acriche Binning structure graphical representation



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)

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