

## 承認書

### SPECIFICATION FOR APPROVAL

Customer/客戶	
Date/日期	2017/01/11
Name/品名	AS-5630WxA2-C2C065-0101-YCx-LTH
Module No./機種	---
Version/版本	3.0

APPROVAL SIGNATURE			
承製者 (From)	Alder Optomechanical Corp. 亞德光機股份有限公司	核准者 (To)	
單位 Dep't	簽章 Signature	單位 Dep't	簽章 Signature
核准 Approval		核准 Approval	
行銷 PM		品保 Q/A	
研發 R/D		工程 Engineering	

注意：請於收到承認書五日內回覆。如無回覆，即視同承認該規格。

**Remark: If no objection is raised within 5 days after receipt, this document will be considered as accepted.**

**Model | AS-5630WxA2-C2C065-0101-YCx-LTH**

## Product Characteristics:

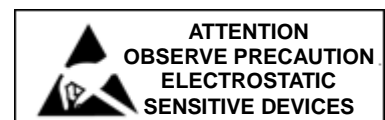


### Absolute Maximum Ratings (Ta = 25°C)

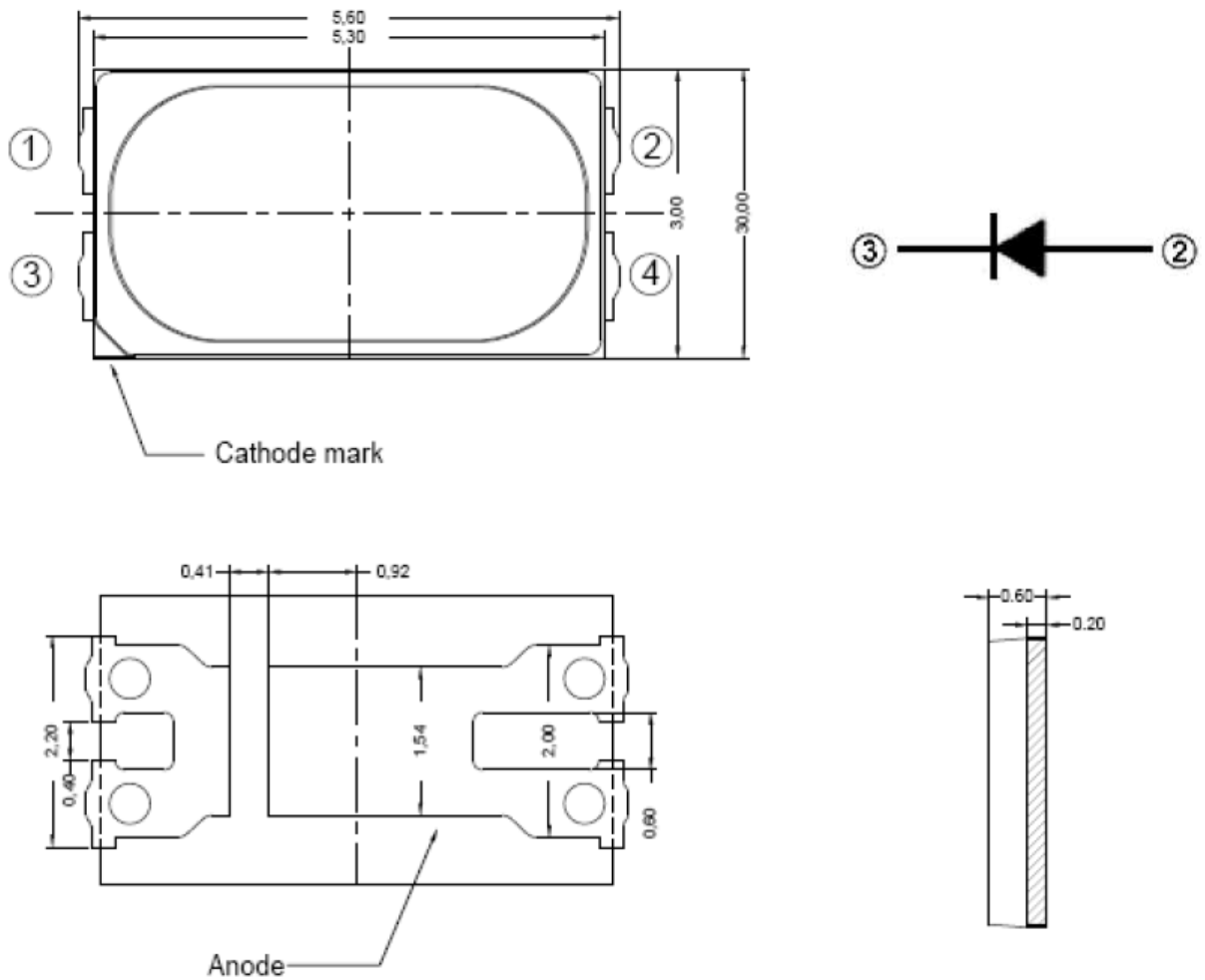
Parameter	Symbol	value	Unit
DC Forward Current <sup>(1)</sup>	I <sub>F</sub>	180	mA
Power Dissipation	P <sub>d</sub>	0.58	W
Pulse Forward Current <sup>(2)</sup>	I <sub>FP</sub>	300	mA
Storage Temperature	T <sub>S</sub>	-40 ~ 100	°C
Operating Temperature	T <sub>opr</sub>	-40 ~ 85	°C
Junction Temperature	T <sub>J</sub>	120	°C
Assembly Temperature	-	260 (max. 5sec)	°C

(1) Proper current rating must be observed to maintain junction temperature below maximum at all time

(2) IFP Condition: Duty 1/10, Pulse within 10msec

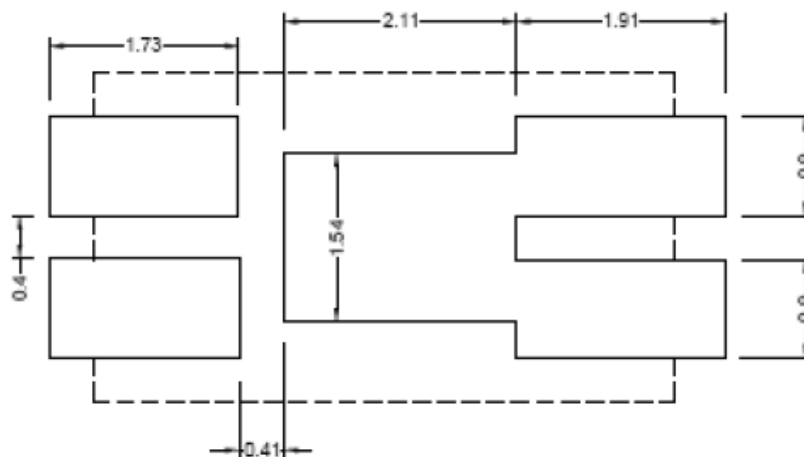


## Package Dimensions:



Unit: mm, Tolerance:  $\pm 0.1$ mm

## Recommended Soldering Pad



## Typical Electrical & Optical Characteristics ( Ta = 25°C):

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage <sup>(1)</sup>	V <sub>F</sub>	I <sub>F</sub> = 65 mA	2.5	-	3.0	V
Color Rendering Index <sup>(2)</sup>	R <sub>a</sub>		80	-	-	-
Color Rendering Index <sup>(3)</sup>	R <sub>9</sub>		0			
View Angle	θ		-	120	-	deg
Thermal Resistance <sup>(3)</sup>	R <sub>th</sub>		-	15	-	°C/W

(1) The Forward Voltage tolerance is ±0.1V

(2) The Color Rendering Index tolerance is ±2

(3) The R<sub>9</sub> is measured at Ta=25°C with the tolerance of ±6

(4) Thermal resistance is calculated from junction to solder

## Luminous Flux (Ta=25°C)

CCT	Condition	Rank
2600K~3700K	I <sub>F</sub> = 65 mA	VG, H1, H2, I1
3700K~7000K		H1, H2, I1, I2, VJ

\* The luminous flux tolerance is ± 7%

## Bin Code Definition

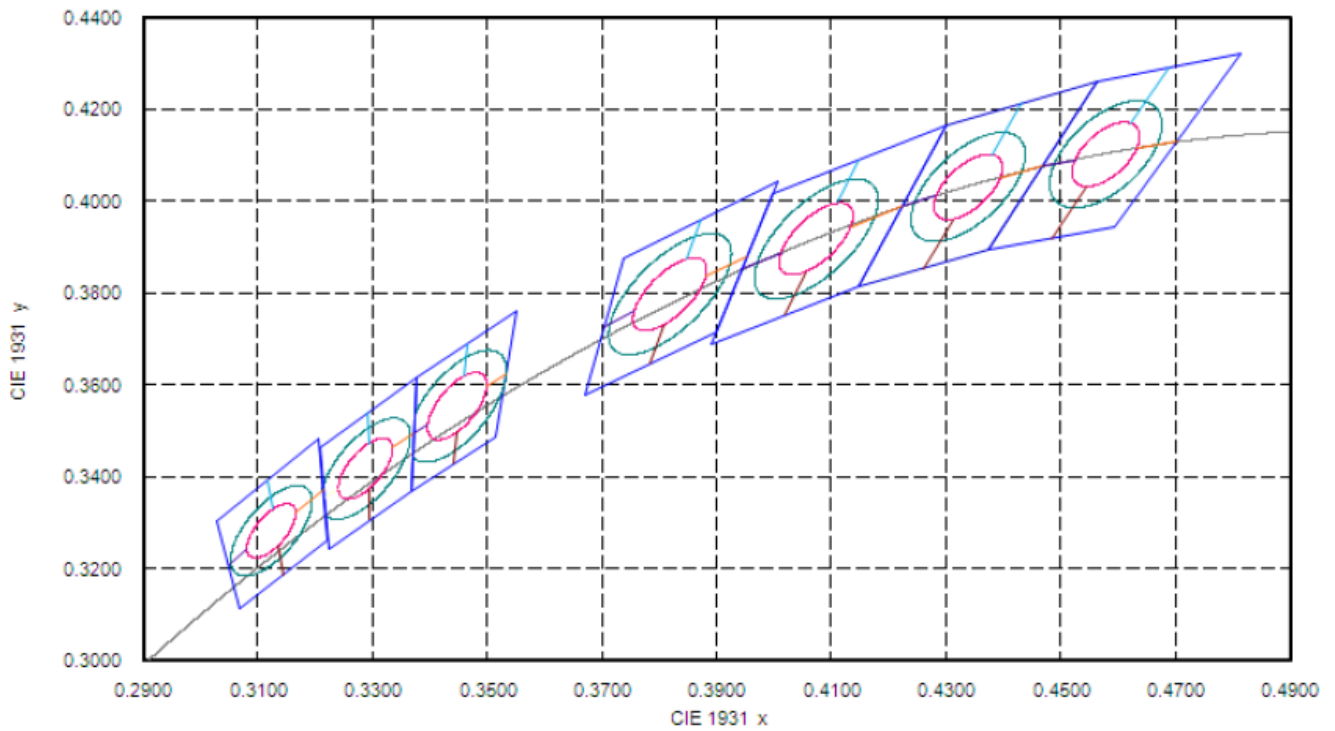
V <sub>F</sub> Rank	Luminous Flux Rank	CIE Rank
0	VG	27A

V <sub>F</sub> Rank	Condition	Min.	Max.
7	I <sub>F</sub> = 65 mA	2.5	2.6
8		2.6	2.7
9		2.7	2.8
0		2.8	2.9
1		2.9	3.0

Luminous Flux Rank	Condition	Min	Max.	
VG	I <sub>F</sub> = 65 mA	28	31.5	
VH*		H1	31.5	33.5
		H2	33.5	35.5
VI*		I1	35.5	38
		I2	38	40.5
VJ		40.5	45	

\*For finer bin selection, VH is replaced by H1 and H2, whereas VI by I1 and I2.

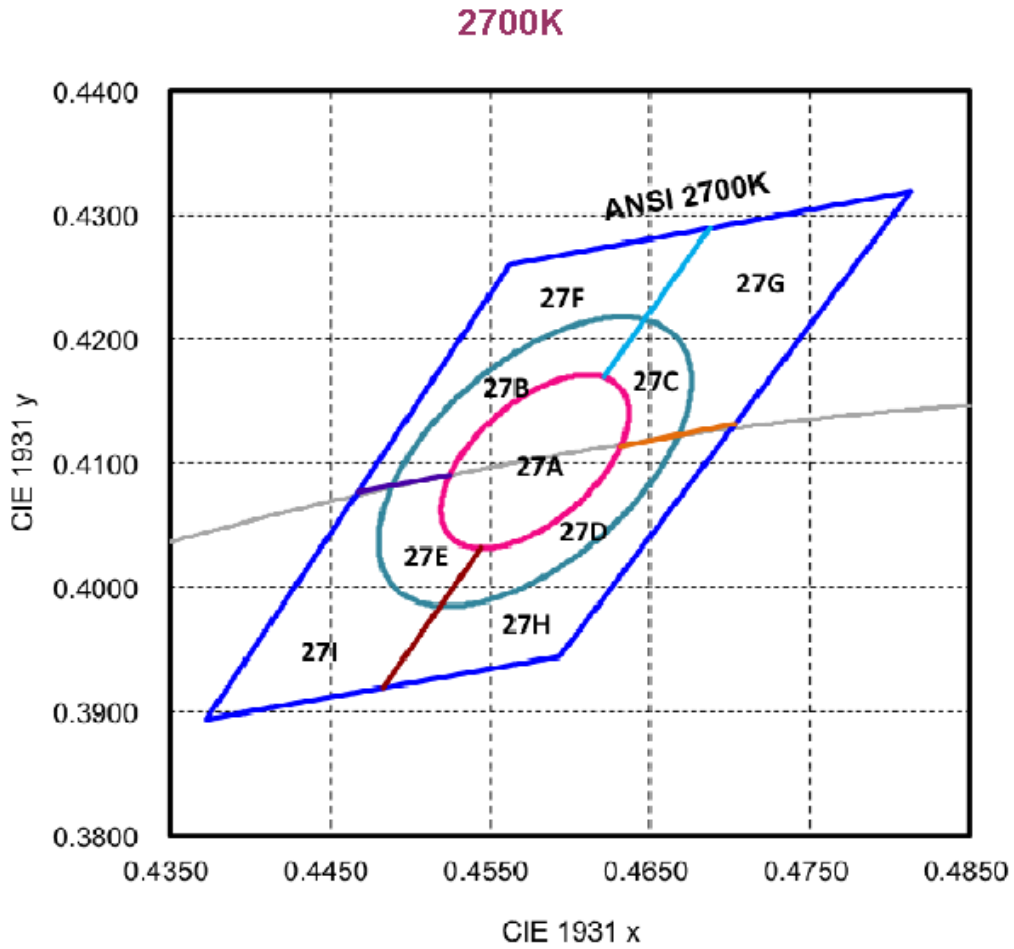
## Chromaticity Coordinates:



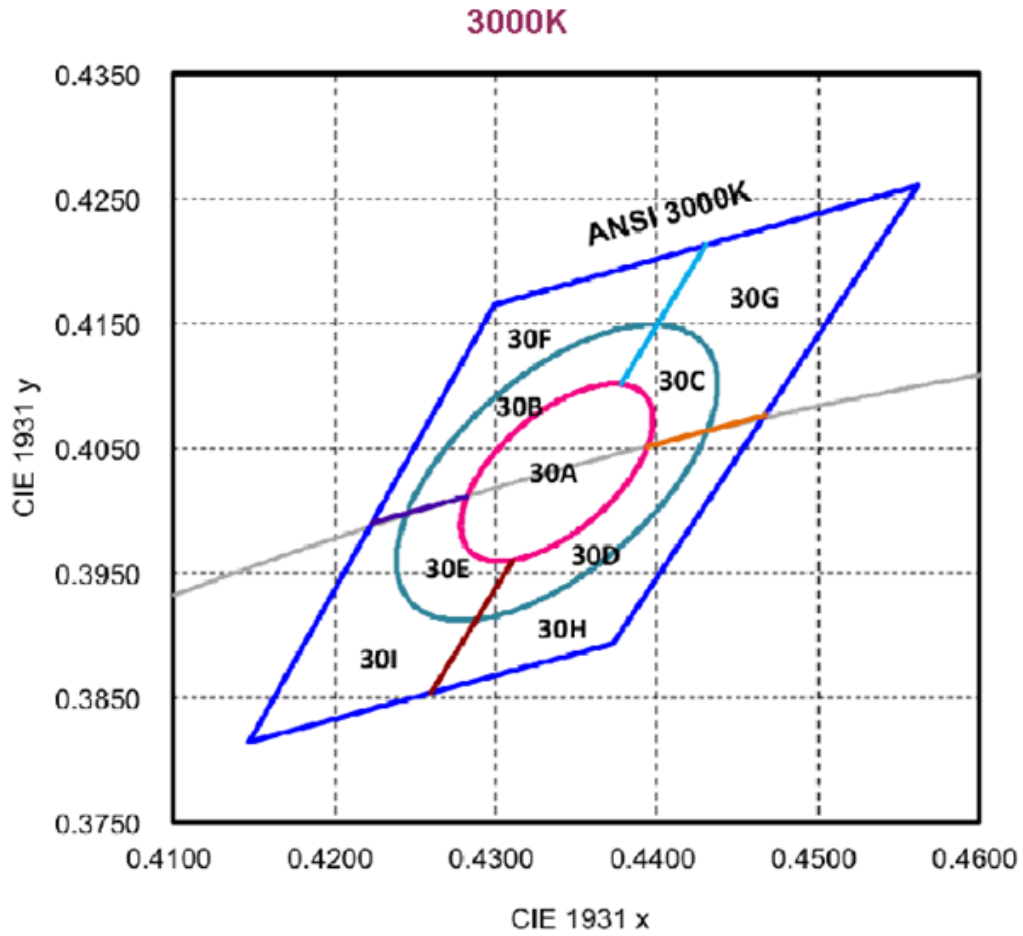
### Note:

- (1) Correlated color Temperature is derived from the CIE 1931 Chromaticity diagram
- (2) CIE measurement tolerance is  $\pm 0.005$
- (3) The luminous flux tolerance is  $\pm 7\%$
- (4) The Forward Voltage tolerance is  $\pm 0.1V$

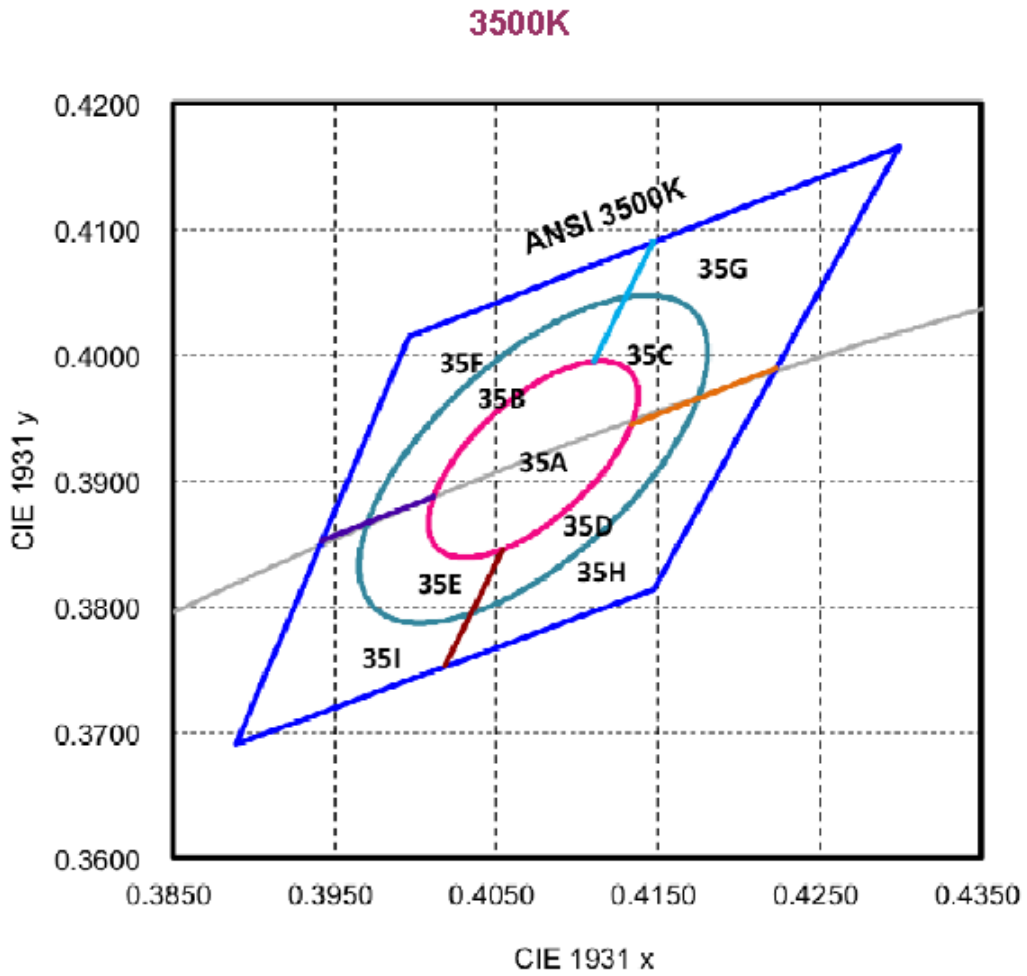
## Bin Code Definition



Nominal ANSI CCT	Color Space	Target Center Point (cx, cy)	Major Axis, a	Minor Axis, b	Ellipse Rotation Angle
2700K	Single 3-step MacAdam ellipse	(0.4578, 0.4101)	0.00810	0.00420	53.70°
2700K	Single 5-step MacAdam ellipse	(0.4578, 0.4101)	0.01350	0.00700	53.70°

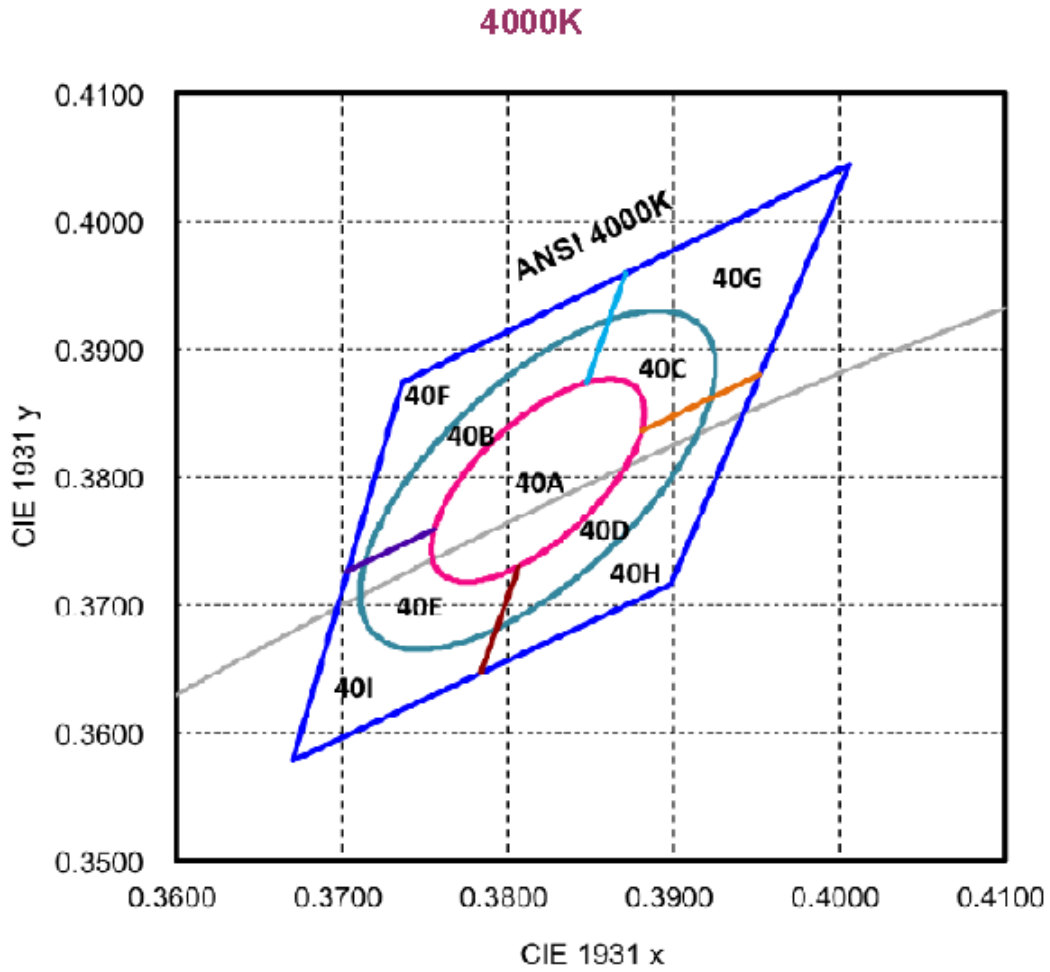


Nominal ANSI CCT	Color Space	Target Center Point (cx, cy)	Major Axis, a	Minor Axis, b	Ellipse Rotation Angle
3000K	Single 3-step MacAdam ellipse	(0.4338, 0.403)	0.00834	0.00408	53.22°
3000K	Single 5-step MacAdam ellipse	(0.4338, 0.403)	0.01390	0.00680	53.22°

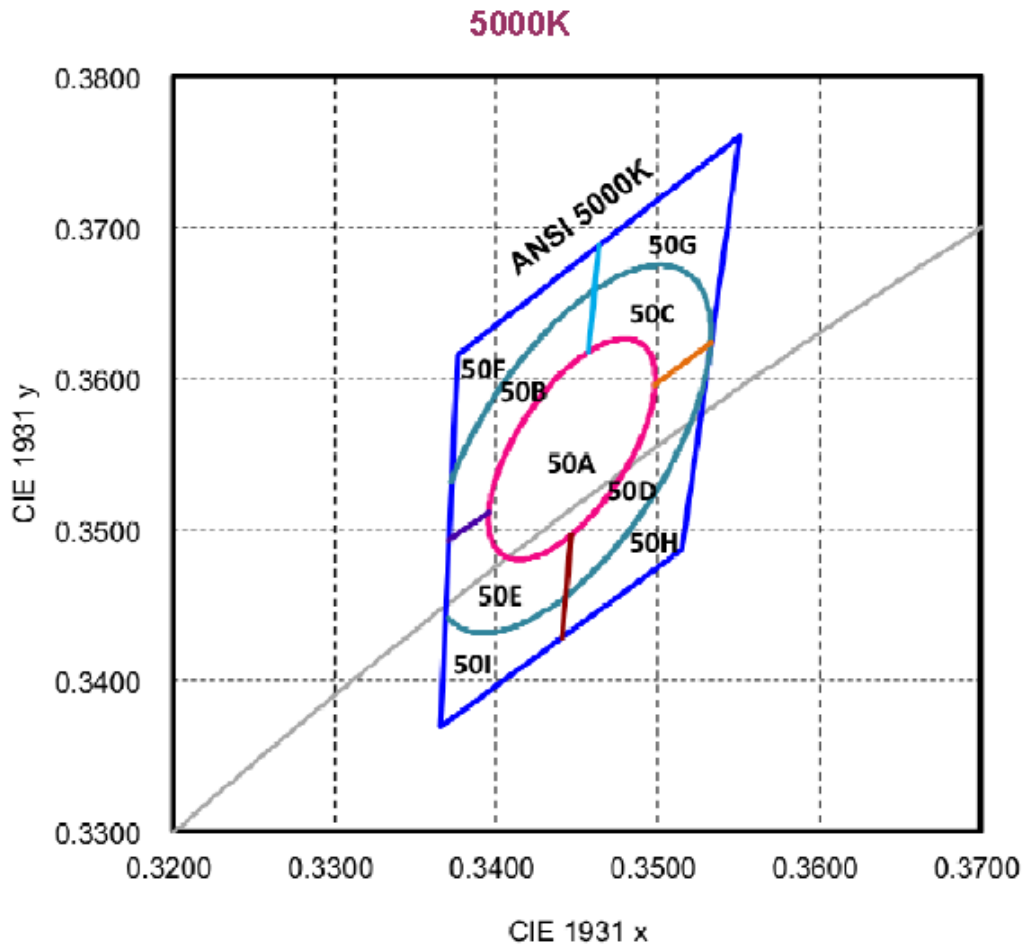


Nominal ANSI CCT	Color Space	Target Center Point (cx, cy)	Major Axis, a	Minor Axis, b	Ellipse Rotation Angle
3500K	Single 3-step MacAdam ellipse	(0.4073, 0.3917)	0.00927	0.00414	53.22°
3500K	Single 5-step MacAdam ellipse	(0.4073, 0.3917)	0.01545	0.00690	53.22°



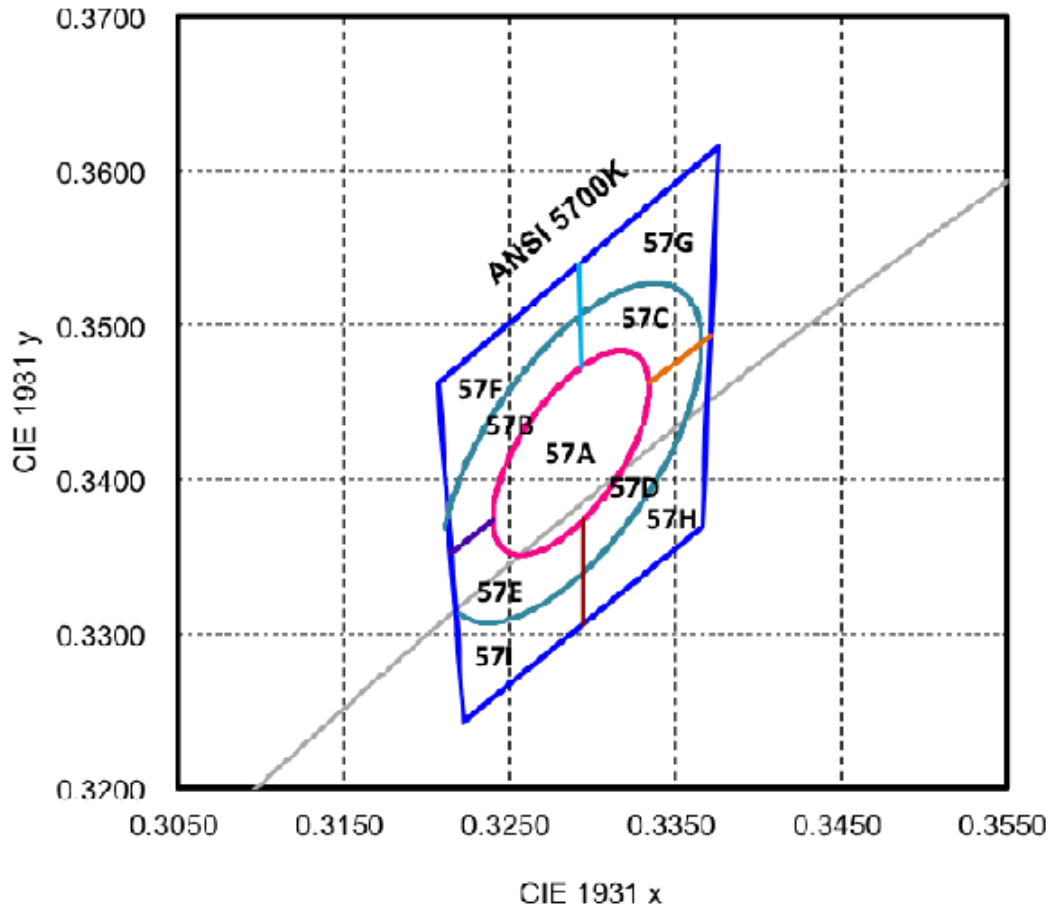


Nominal ANSI CCT	Color Space	Target Center Point (cx, cy)	Major Axis, a	Minor Axis, b	Ellipse Rotation Angle
4000K	Single 3-step MacAdam ellipse	(0.3818, 0.3797)	0.00939	0.00402	53.72°
4000K	Single 5-step MacAdam ellipse	(0.3818, 0.3797)	0.01585	0.00670	53.72°

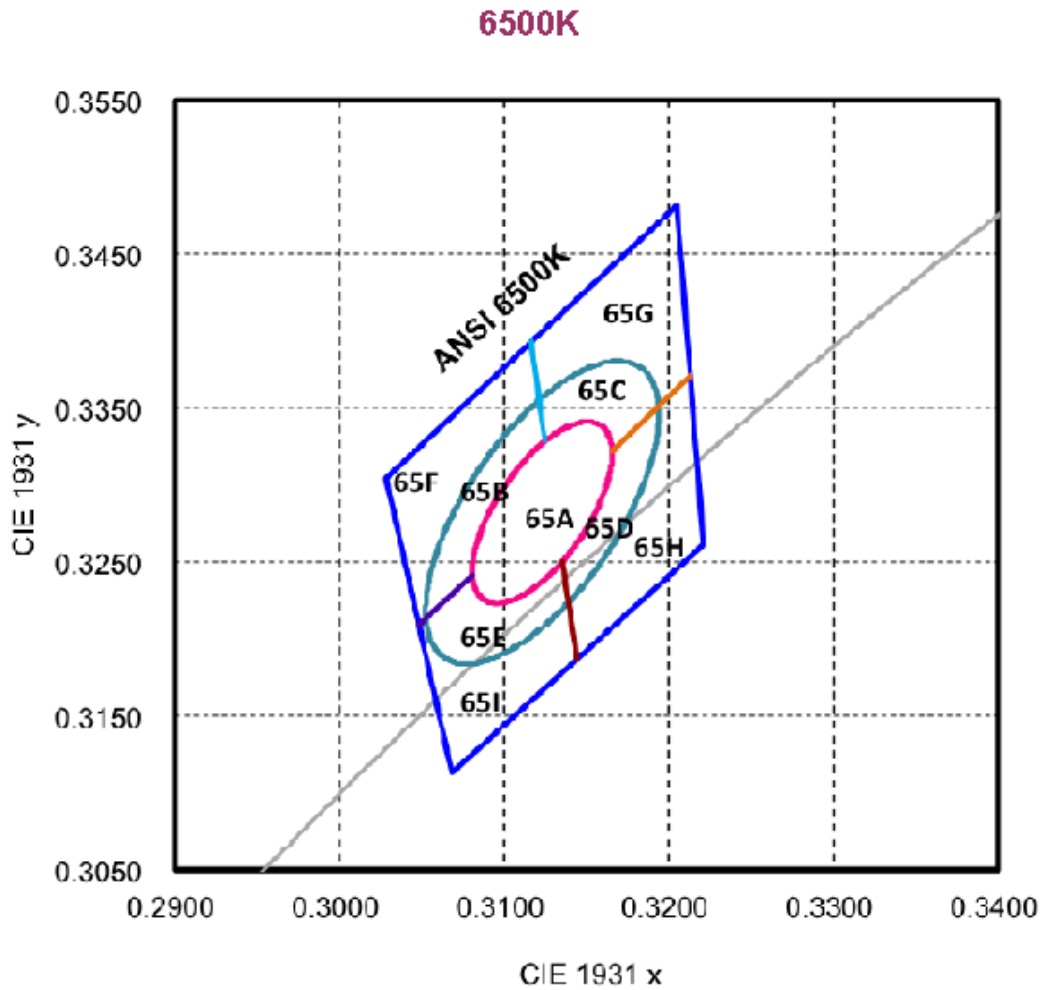


Nominal ANSI CCT	Color Space	Target Center Point (cx, cy)	Major Axis, a	Minor Axis, b	Ellipse Rotation Angle
5000K	Single 3-step MacAdam ellipse	(0.3447, 0.3553)	0.00822	0.00354	59.62°
5000K	Single 5-step MacAdam ellipse	(0.3447, 0.3553)	0.01370	0.00590	59.62°

## 5700K



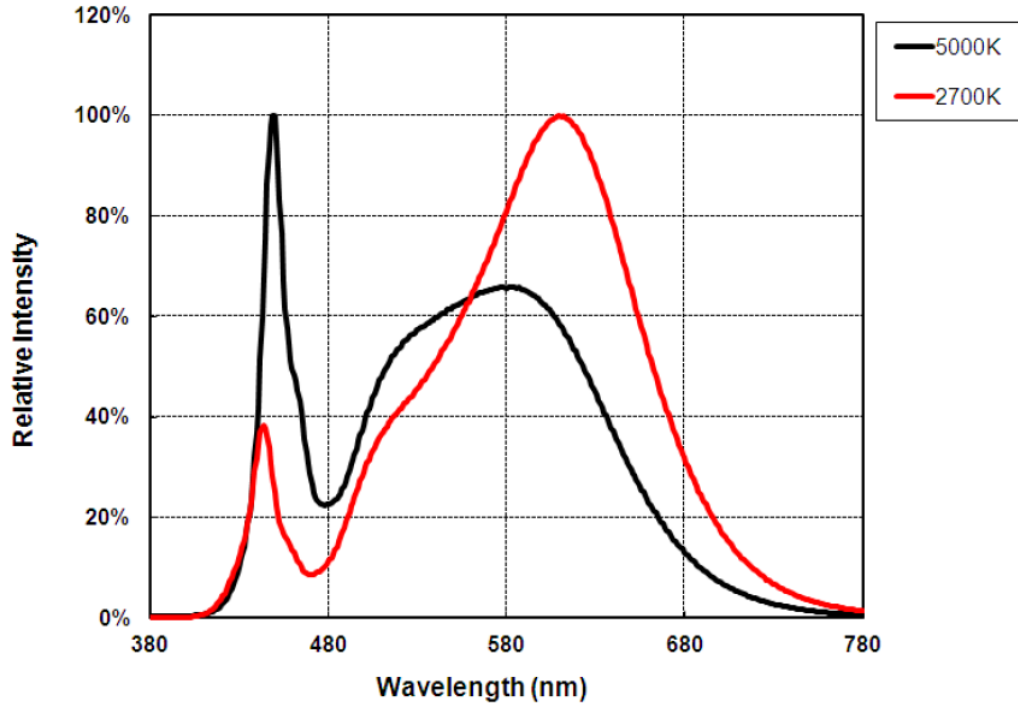
Nominal ANSI CCT	Color Space	Target Center Point (cx, cy)	Major Axis, a	Minor Axis, b	Ellipse Rotation Angle
5700K	Single 3-step MacAdam ellipse	(0.3287, 0.3417)	0.00746	0.00320	59.09°
5700K	Single 5-step MacAdam ellipse	(0.3287, 0.3417)	0.01243	0.00533	59.09°



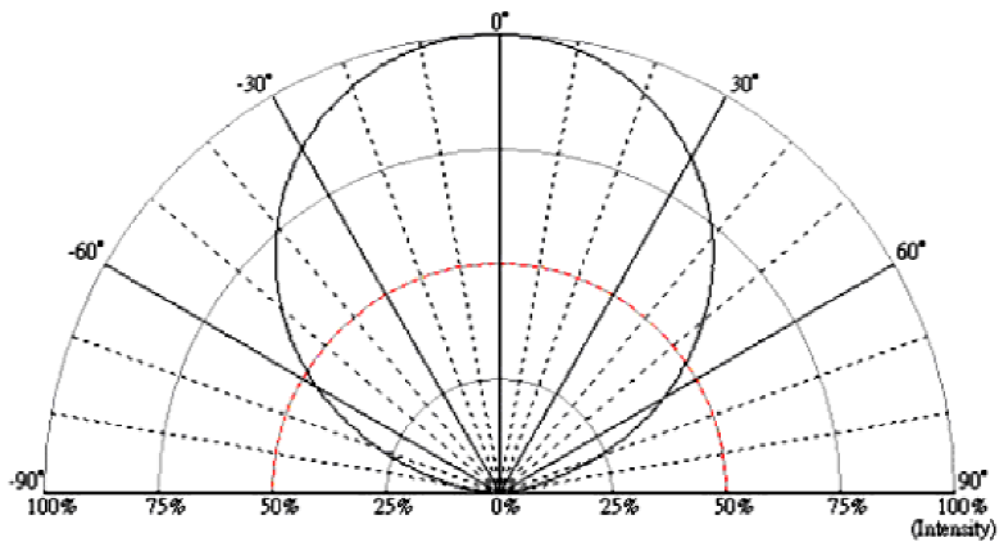
Nominal ANSI CCT	Color Space	Target Center Point (cx, cy)	Major Axis, a	Minor Axis, b	Ellipse Rotation Angle
6500K	Single 3-step MacAdam ellipse	(0.3123, 0.3282)	0.00669	0.00285	58.57°
6500K	Single 5-step MacAdam ellipse	(0.3123, 0.3282)	0.01115	0.00475	58.57°

**Typical Electrical / Optical Characteristics Curves:**

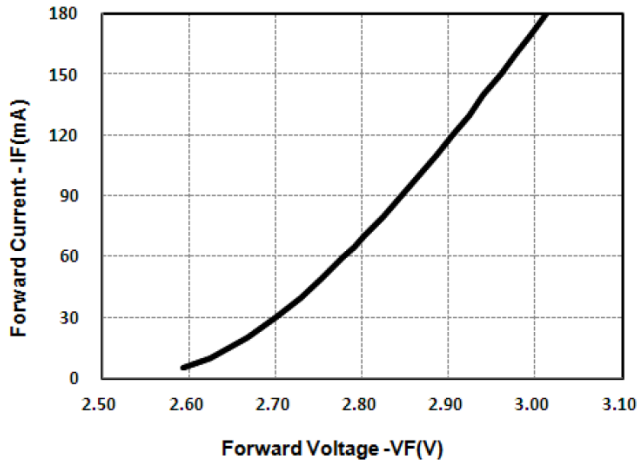
**Spectrum**



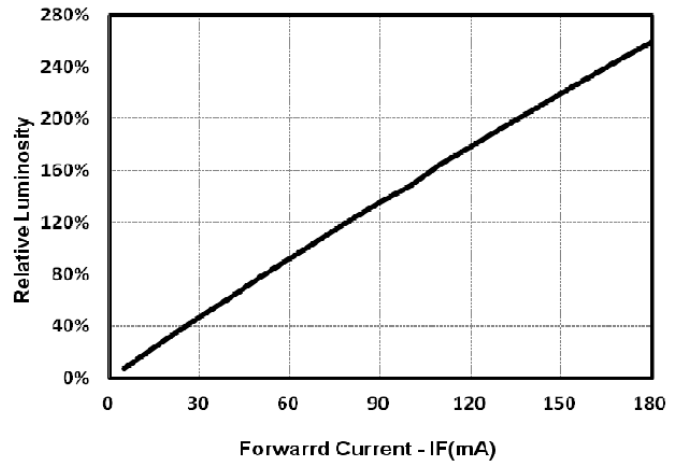
**Radiation Pattern**



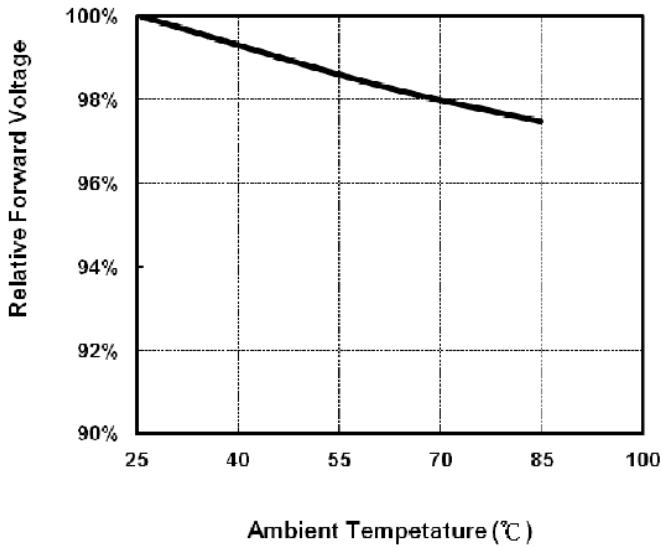
**Forward Voltage vs. Forward Current**



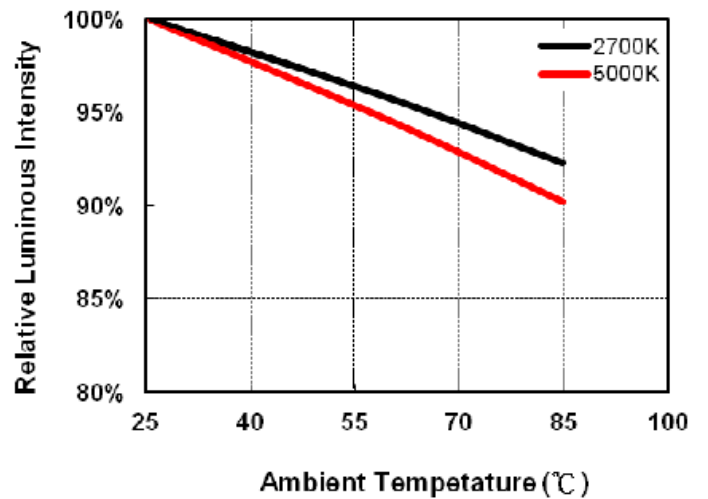
**Forward Current vs. Relative Luminosity**



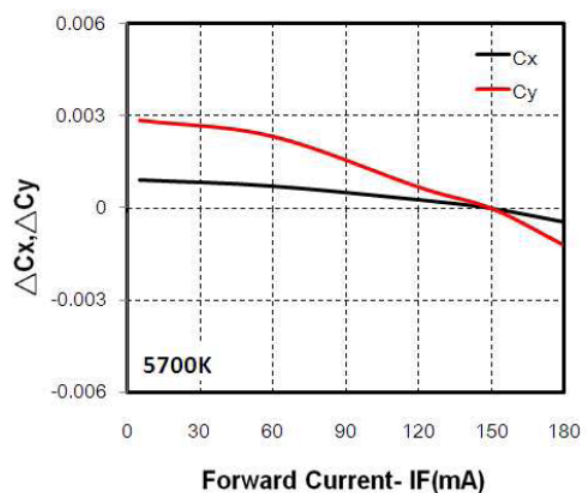
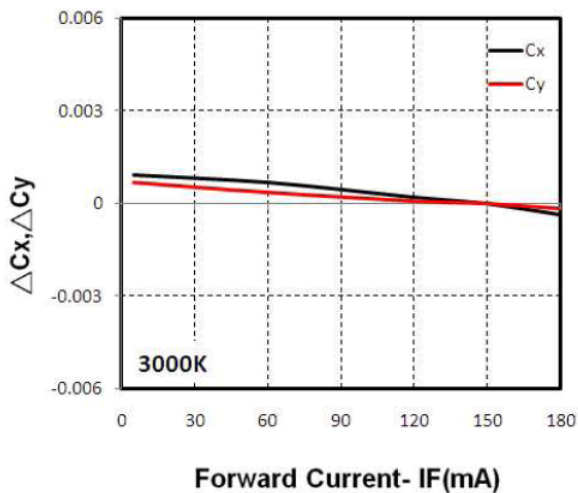
**Relative Forward Voltage vs. Ambient Temperature**



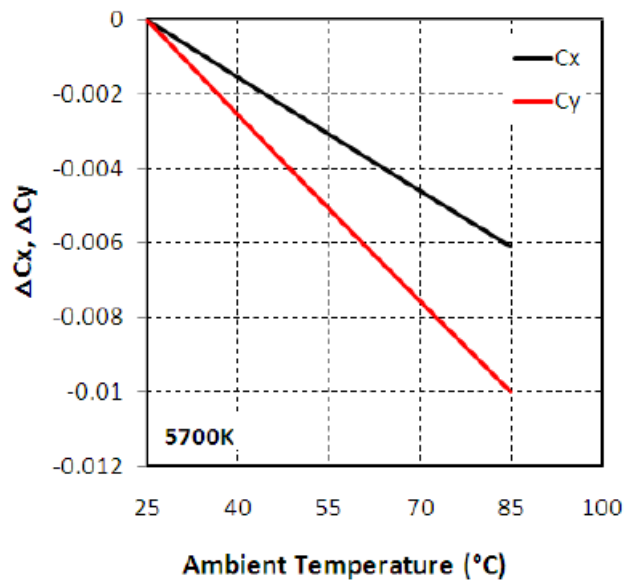
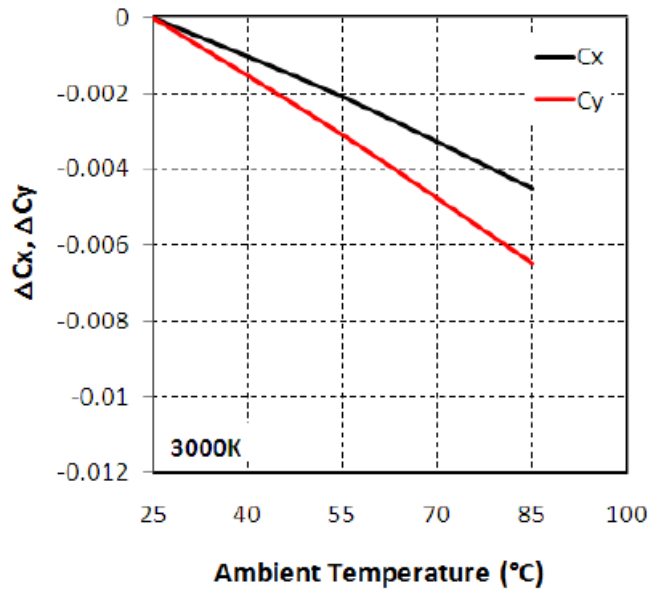
**Relative Luminous Intensity vs. Ambient Temperature**



**Forward Current vs. Chromaticity Coordinate**

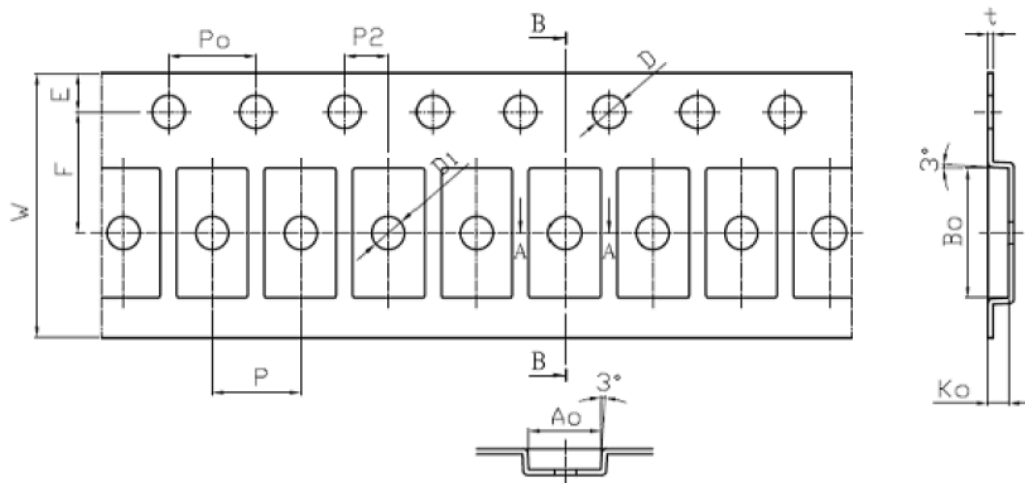
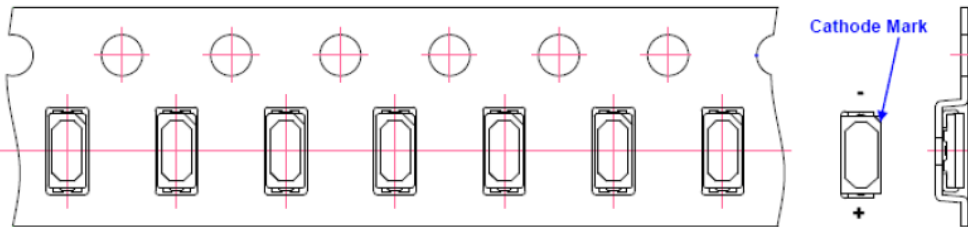
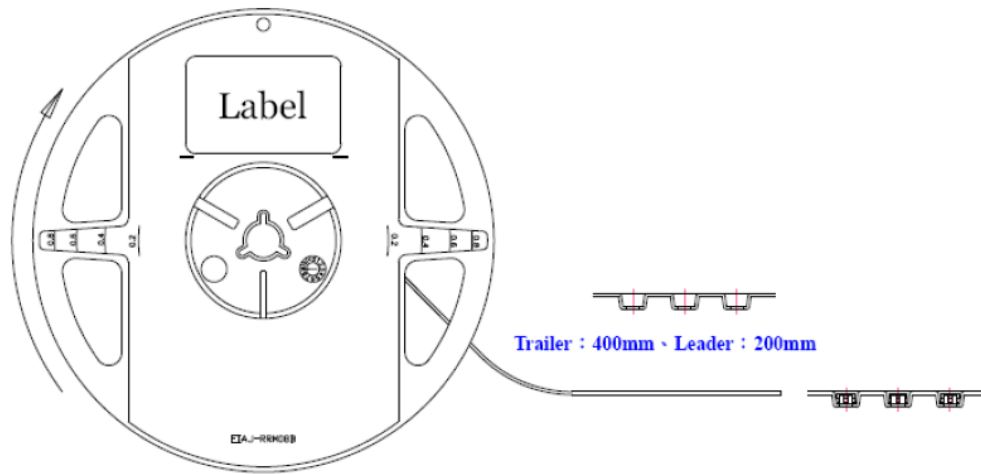


## Chromaticity vs. Ambient Temperature



## Product Shipment & Package Related:

### Carrier Taping



Unit: mm

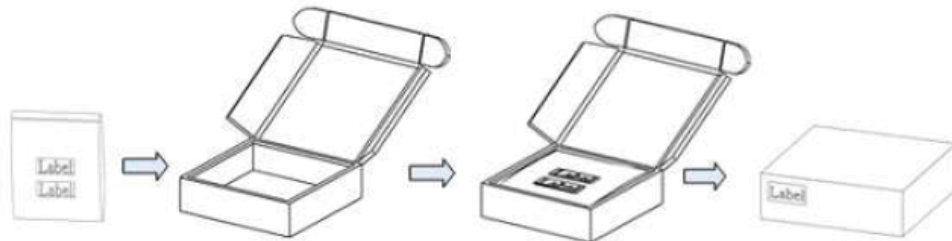
Item	Spec	To1. (+/- )	Item	Spec	To1. (+/- )
W	12.00	±0.10	P2	2.00	±0.05
E	1.75	±0.10	P0 x 10	40.00	±0.20
F	5.50	±0.05	t1	0.25	±0.05
D	1.50	+0.10, -0.00	A0	3.25	±0.10
D1	1.50	±0.10	B0	5.90	±0.10
P0、P1	4.00	±0.20	K0	0.95	±0.10



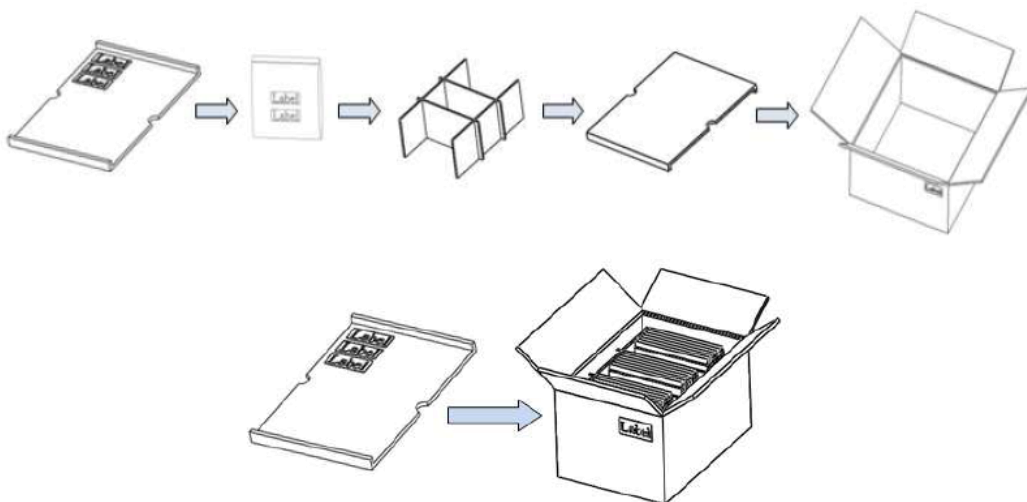
## Packing Box

Type	Large Box		Medium Box		Small Box	
Dimension	541X511X276mm		385X303X260mm		283X235x70mm	
Maximum Reels	7"X12mm Reel	64/R	7"X12mm Reel	21/R	7"X12mm Reel	4/R
Minimum Reels	7"X12mm Reel	32/R	7"X12mm Reel	9/R	7"X12mm Reel	1/R

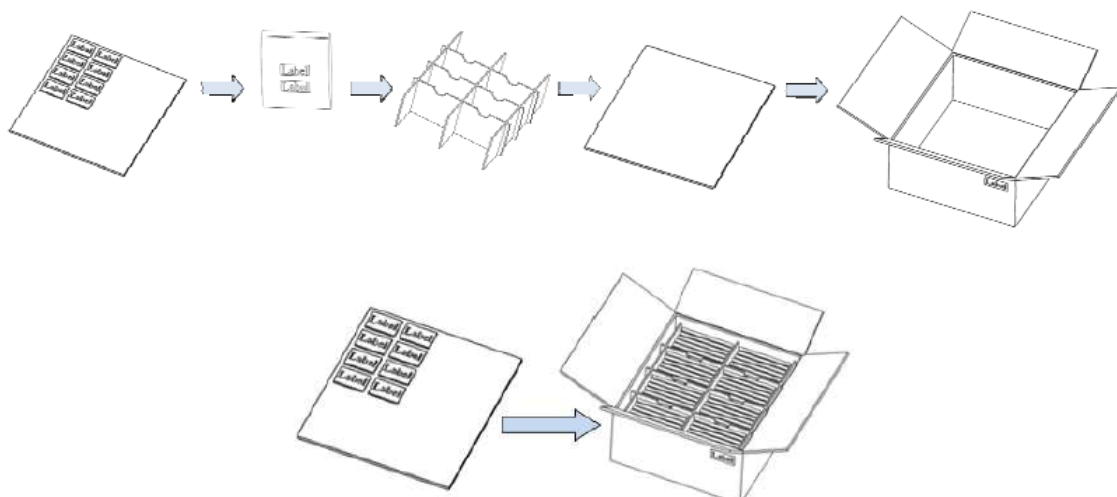
### Small Box



### Medium Box



### Large Box



## Reliability:

### Reliability Test

Item	Condition	Current	Time/Cycle
Steady State Operating Life of Low Temperature -40°C	-40°C Operating	180mA	1000 Hrs
Steady State Operating Life of High Temperature 60°C	60°C Operating	180mA	1000 Hrs
Steady State Operating Life of High Temperature 85°C	85°C Operating	180mA	1000 Hrs
Low temperature storage -40°C	-40°C Storage	NA	1000 Hrs
High temperature storage 100°C	100°C Storage	NA	1000 Hrs
Steady State Operating Life of High Humidity Heat 60°C/90%	60°C/90% Operating	180mA	1000 Hrs
Resistance to soldering heat on PCB (JEDEC MSL3)	pre-store@60°C, 60%RH for 52hrs Tslid max.=260°C 10sec	NA	3 Times
Thermal shock	-40°C/20minr ~5minr ~ 100°C/20min	NA	300 Cycles

### Judgment Criteria

Item	Symbol	Test Condition	Judgment Criteria
Forward Voltage	Vf	180mA	$\Delta Vf < 10 \%$
Luminous Flux	Iv	180mA	$\Delta Iv < 30 \%$

## Precautions For Use:

### Safety Precautions

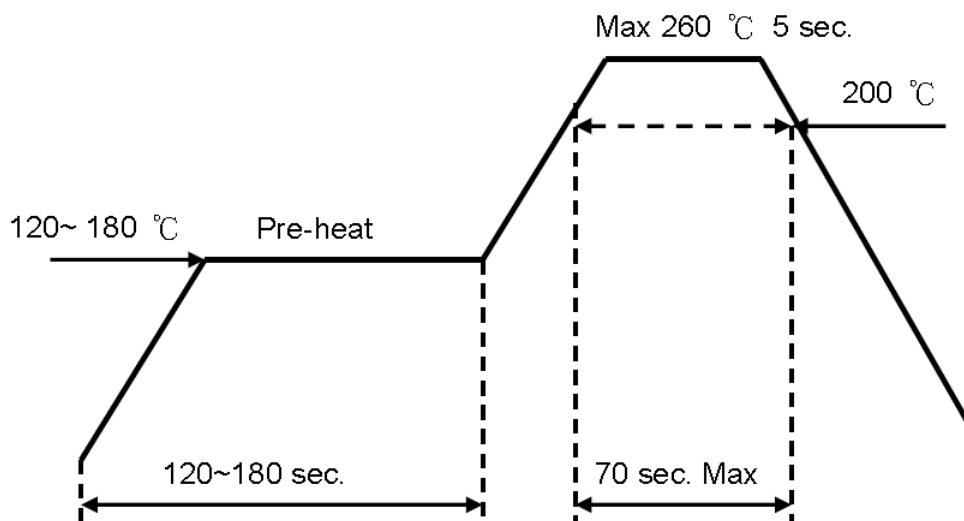
- The LED light output is too strong for human eyes without shield. Prevent eye contact directly more than seconds.
- Ensure operating under maximum rating.

### Storage

- Before opening the package, the LEDs should storage under 30°C, 60% RH.
- After opening the package bag, the LEDs should be keep under 30°C, 60% RH. Recommend to use within 168 hrs. If unused LEDs remain, suggest to store into moisture proof bag or original package bag with moisture absorbent material such as silica gel. Reseal well is necessary.
- If the product exceeded the storage period or the moisture absorbent material faded away, baking treatment should be done by following conditions.  
Bake condition: 60°C, 12hours (One time only).

### Soldering Notice and Conditions

- When soldering LEDs,
- Do not solder/reflow the same LED over two times.
- Recommend soldering conditions:  
Hand soldering: 350 °C max , 3 sec. max.  
Reflow soldering: Pre-heat 180 °C max , 180 sec. max.  
Peak 260 °C max , 5 sec. max.
- Reflow temperature profile as below: (lead-free solder)



- When soldering, don't put stress on the LEDs
- After LEDs have been soldered, strongly recommend not to repair to keep the LEDs performance.

### Static Electricity

- LED package is extremely sensitive to static electricity. It's recommended that anti-electrostatic glove and wrist band is necessary when handling the LEDs. All devices are also be grounded properly as well.
- Protection devices design should be considered in the LED driving circuit.

### Cleaning

- If washing is required, recommend to use alcohol as a solvent.
- Recommend to avoid cleaning the LEDs by ultrasonic. If necessary, pre-test the LED is necessary to confirm whether any damage occur after the process.