



COTCO LUMINANT DEVICE (HUIZHOU) LTD.

SPECIFICATION FOR COTCO LED LAMP

Document No: SPE/LP6-PWR1-03-N1
Model No : LP6-PWR1-03-N1
Rev. No : 03
Date: 2005-11-02

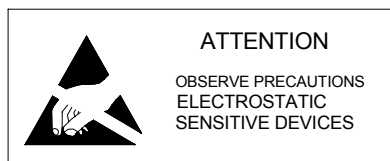
Description:

120 Degree 6.0 x 5.0mm SMT-LED in
Warm White Color with Water Transparent

Dice Material: InGaN

Confirmed
By Customer: _____

Date: _____



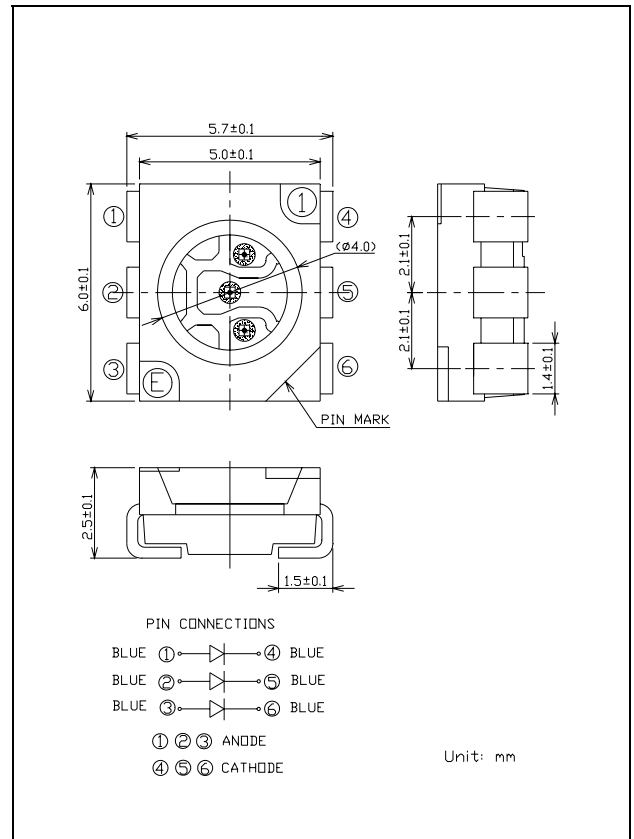
Applications:

- Indicators
- Illuminations
- LCD Back Lights
- Automobile's Applications

Absolute Maximum Ratings at Ta = 25°C

Items	Symbol	Absolute maximum Rating	Unit
Forward Current	I_F	3 X 50	mA
Peak Forward Current*	I_{FP}	3 X 100	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	3 X 255	mW
Operation Temperature	T_{opr}	-40 ~ + 100	°C
Storage Temperature	T_{stg}	-40 ~ + 100	°C
Junction temperature	T_j	+110	°C
Junction/ambient **	$R_{th JA}$	3 x 300	°C /W
Junction/solder point	$R_{th JS}$	3 x 160	°C /W

Dimension Drawing



*pulse width ≤ 0.1 msec duty ≤ 1/10 ** Rth test condition: Mounted on PC Board FR 4 (pad size ≥ 40mm²)

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

Items	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F = 3 \times 50\text{mA}$	---	4.5	5.1	V
Reverse Current	I_R	$V_R = 5\text{V}$	---	---	10	μA
Luminous Intensity	I_V	$I_F = 3 \times 50\text{mA}$	1800	3100	---	mcd
Luminous Flux	Φ_V	$I_F = 3 \times 50\text{mA}$	---	9000	---	mlm
Color Temperature	CCT	$I_F = 3 \times 50\text{mA}$	---	3200	---	K
Chromaticity Coordinates	x	$I_F = 3 \times 50\text{mA}$	---	0.426	---	---
	y	$I_F = 3 \times 50\text{mA}$	---	0.407	---	---
50% Power Angle	$2\theta_{1/2}$	$I_F = 3 \times 50\text{mA}$	---	120	---	deg

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Standard bins for LP6-PWR1-03-N1(IF =3x 50mA):

Lamps are sorted to Luminous Intensity –IV & Chromaticity Coordinates –(X,Y) bins shown.

Orders for LP6-PWR1-03-N1 may be filled with any or all bins contained as below.

All Luminous Intensity –IV & Chromaticity Coordinates –(X,Y) values shown and specified are at IF =3x50mA.

* **X1+**

		D	E	F										
Luminous Intensity (lv)	4500mcd				Y2									
	3550mcd						Y1							
	2800mcd								X2					
	2240mcd										X1			
	1800mcd													

Chromaticity Coordinates (X,Y)

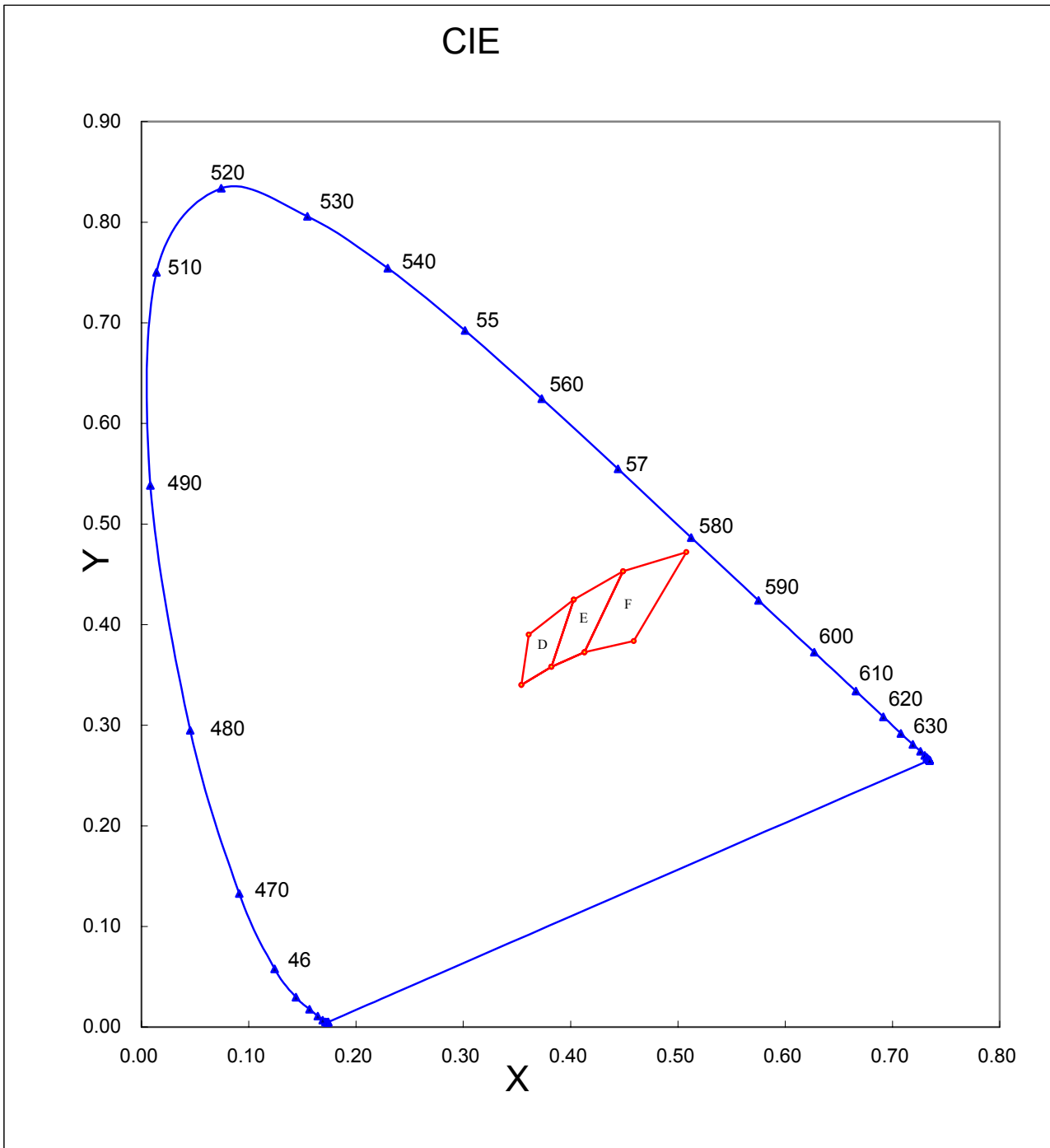
* X1+ indicates Luminous Intensity is at X1 bin or above.

Rank		D				E				F			
Chromaticity Coordinates	x	0.3541	0.3610	0.4030	0.3822	0.3822	0.4030	0.4490	0.4129	0.4129	0.4490	0.5080	0.4588
	y	0.3401	0.3900	0.4250	0.3580	0.3580	0.4250	0.4530	0.3725	0.3725	0.4530	0.4720	0.3838

Important Notes:

- 1) All ranks will be included per delivery, rank ratio will be based on Dices distribution.
- 2) Tolerance of measurement of luminous intensity is $\pm 10\%$
- 3) Tolerance of measurement of the Color Coordinates is ± 0.015 .
- 4) Tolerance of measurement of Vf is ± 0.05 V.
- 5) Packaging methods are available for selection, please refer to PACKAGING STANDARD.
- 6) Please refer to LED LAMP RELIABILITY TEST STANDARD for reliability test conditions.
- 7) Please refer to APPLICATION NOTES for Application.

CIE Chromaticity Diagram



Graphs

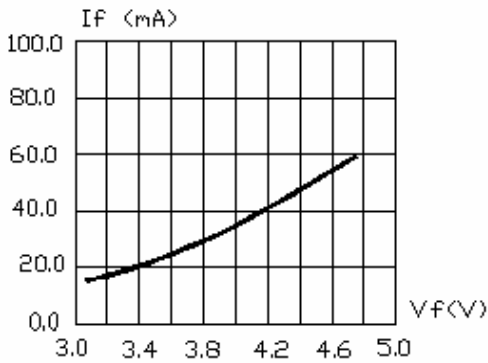


FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

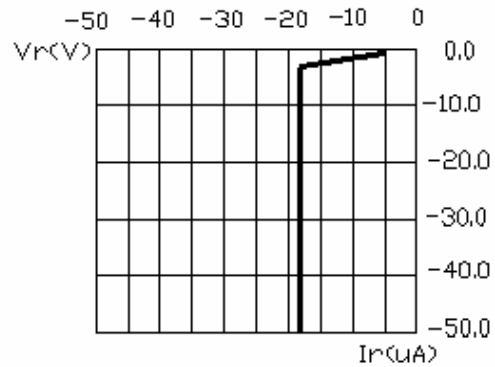


FIG.2 REVERSE CURRENT VS. REVERSE VOLTAGE.

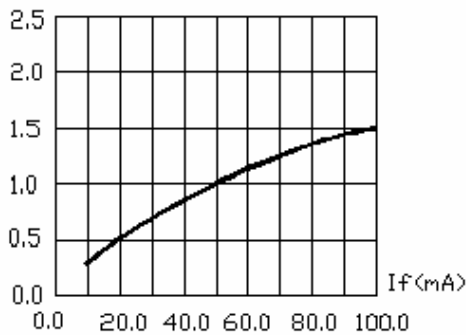


FIG.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

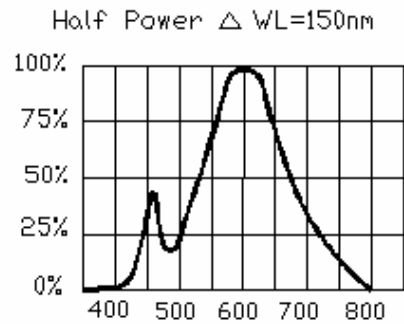


FIG.4 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH.

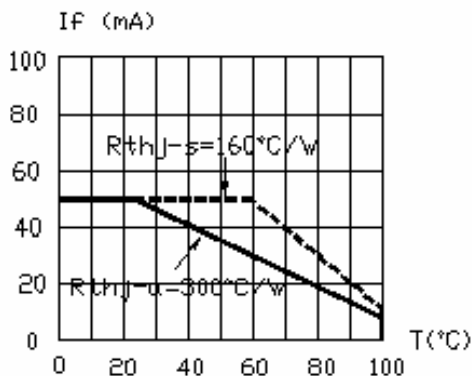


FIG.5 MAXIMUM FORWARD DC CURRENT VS TEMPERATURE. DERATING BASED ON $T_{jmax}=110^{\circ}C$

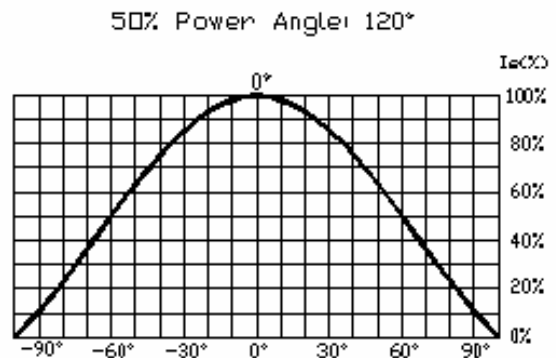


FIG.6 FAR FIELD PATTERN

Items	Signatures	Date	Revision History		
Prepared by	Meiliping	2005-11-02	Rev.No	Date	Change Description
Checked by	XieJH	2005-11-02	02	2005-08-11	Release. Add Φ_v (typ) 9000lm; Change IV (typ) from 2750mcd to 3100mcd.
Approved by	DavidLiu	2005-11-02	03	2005-11-02	Change VF(avg) from 4.0V to 4.5V, VF(max) from 4.6V to 5.1V; PD from 3X230 mW to 3X255 mW; Change Graphs.
FCN#	FCN20050364				

Data is subject to change without prior notice; please refer to COTCO Website for the latest version.

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