



SPECIFICATION FOR COTCO LED LAMP

Document No: SPE/LC503TWR1-15H-A1
Model No : LC503TWR1-15H-A1
Rev. No: 03
Date: 2005-09-12

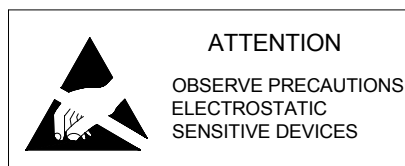
Description:

15 Degree 5mm Round LED Lamp in Warm
White Color with Water Transparent Lens and
No Stopper

Dice Material: InGaN

Confirmed
by Customer: _____

Date: _____



Applications:

- Advertising Signs
- Indicators
- LCD Back Light
- Illuminations

Absolute Maximum Ratings at Ta = 25°C

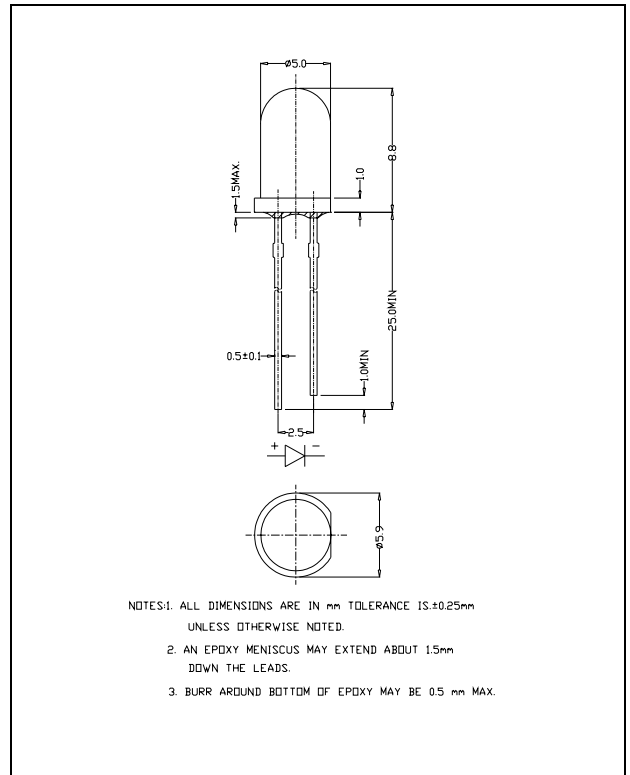
Items	Symbol	Absolute maximum Rating	Unit
Forward Current	I_F	25	mA
Peak Forward Current*	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	100	mW
Operation Temperature	T_{opr}	-40 ~ +95	°C
Storage Temperature	T_{stg}	-40 ~ +100	°C
Lead Soldering Temperature	T_{sol}	Max.260°C for 3 sec Max. (3mm from the base of the epoxy bulb)	

*pulse width $\leq 0.1\text{msec}$ duty $\leq 1/10$

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

Items	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F = 20\text{mA}$	---	3.4	4.0	V
Forward Voltage	V_F	$I_F = 1.0\mu\text{A}$	1.7	---	2.5	V
Reverse Current	I_R	$V_R = 5\text{V}$	---	---	100	μA
Luminous Intensity	I_v	$I_F = 20\text{mA}$	4180	7000	---	mcd
Chromaticity Coordinates	x	$I_F = 20\text{mA}$	---	0.426	---	---
	y	$I_F = 20\text{mA}$	---	0.407	---	---
Color Temperature	CCT	$I_F = 20\text{mA}$	---	3000	---	K
50% Power Angle	$2\theta_{\frac{1}{2}H-H}$	$I_F = 20\text{mA}$	---	15	---	deg

Dimension Drawing

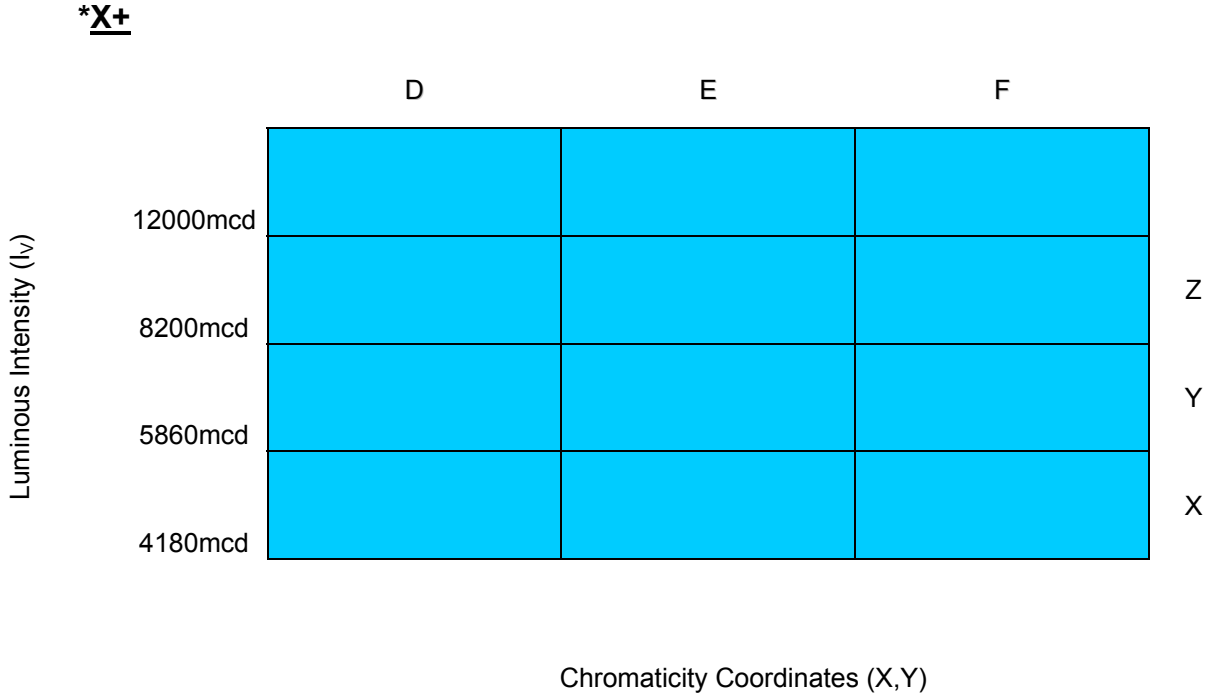


Standard bins for LC503TWR1-15H-A1 (I_F = 20mA):

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

Orders for LC503TWR1-15H-A1 may be filled with any or all bins contained as below.

All Luminous Intensity –I_v, V_F & Chromaticity Coordinates –(X,Y) values shown and specified are at I_F =20mA.



* X+ indicates Luminous Intensity is at X 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

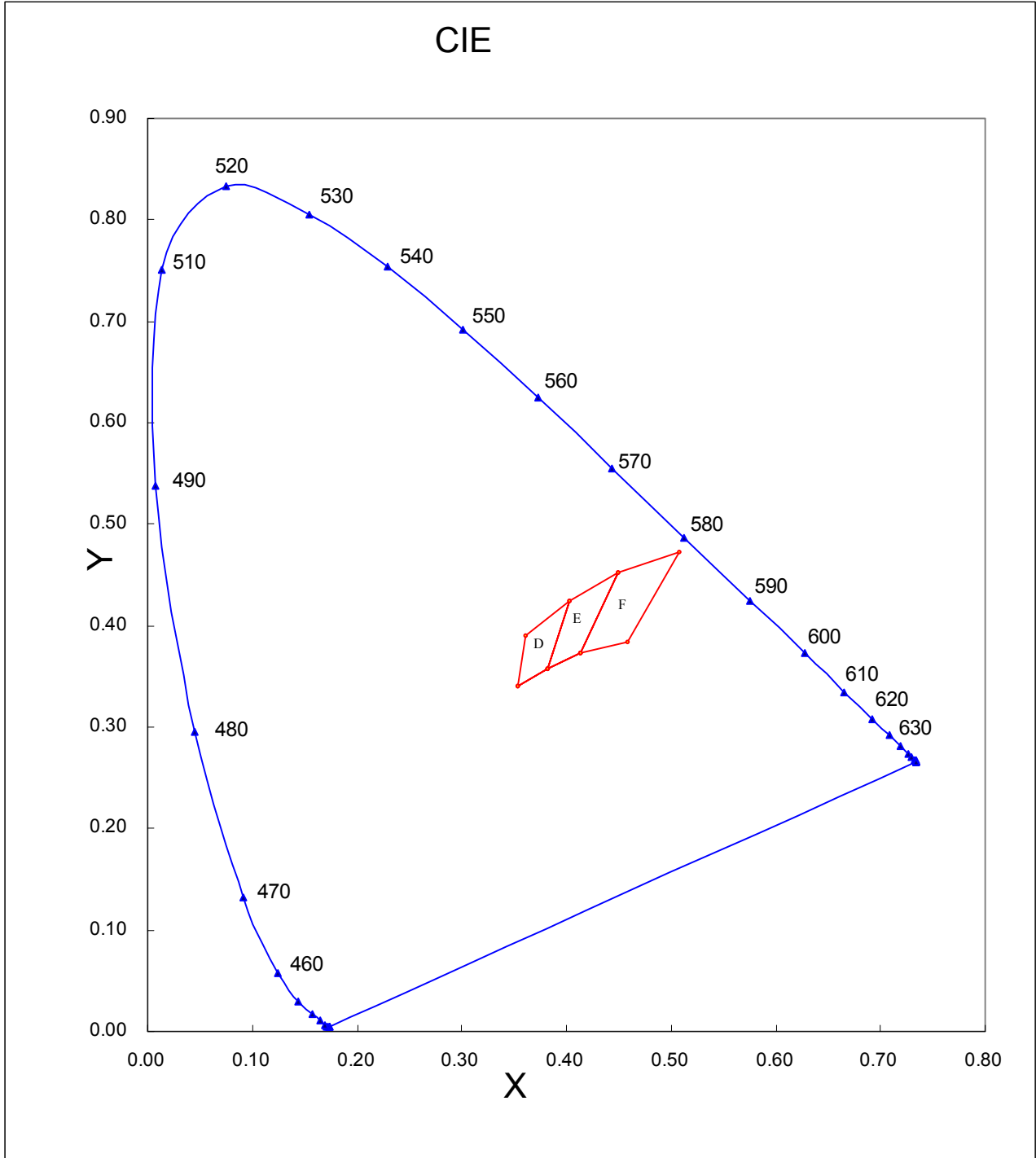
Forward Voltage (V_F)

Rank	V6	V7	V8	V9	V10	V11	V12
Voltage	2.6-2.8V	2.8-3.0V	3.0-3.2V	3.2-3.4V	3.4-3.6V	3.6-3.8V	3.8-4.0V

Important Notes:

- 1) All ranks will be included per delivery, rank ratio will be based on the Dices distribution.
- 2) Pb content <1000PPM.
- 3) Tolerance of measurement of luminous intensity is ±15%.
- 4) Tolerance of measurement of the Color Coordinates is ± 0.015.
- 5) Tolerance of measurement of Vf is ±0.05 V.
- 6) Packaging methods are available for selection, Please refer to PACKAGING STANDARD.
- 7) Please refer to LED LAMP RELIABILITY TEST STANDARD for reliability test conditions.
- 8) Please refer to APPLICATION NOTES for Application.

CIE Chromaticity Diagram



Graphs

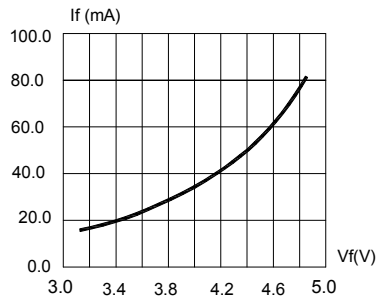


FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

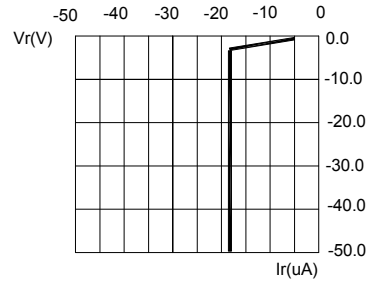


FIG.2 REVERSE CURRENT VS. REVERSE VOLTAGE.

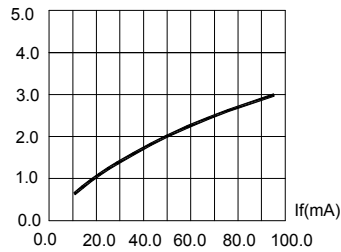


FIG.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

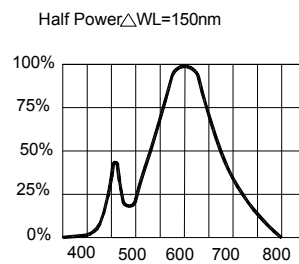


FIG.4 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH.

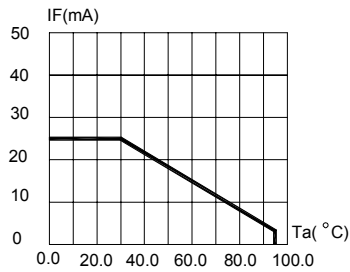


FIG.5 MAXIMUM FORWARD DC CURRENT VS AMBIENT TEMPERATURE ($T_{jmax}=105^{\circ}C$)

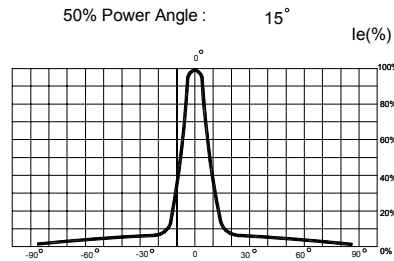


FIG.6 FAR FIELD PATTERN

Items	Signatures	Date
Prepared by	LiuZM	2005-09-12
Checked by	HuangJD	2005-09-12
Approved by	David	2005-09-12
FCN#	FCN20050297	

Revision History		
Rev. No	Date	Change Description
02	2005-08-19	Release. Change IV(typ)6600 to 7000mcd.
03	2005-09-12	Add CCT.

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

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