



Ledman Optoelectronic Co., Ltd.

DATA SHEET

Model No. : LL1502HCWW1-C01

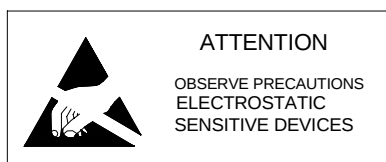
Doc No. : LMS-15-170

Revision No. : 02

Description:

- 5mm Round lamp
- Lens Color: Water Clear
- Emitting Color: White
- Viewing Angle :120°
- No Stopper

Dice Material: InGaN



PREPARED BY	CHECKED BY	APPROVED BY
Xiaowei Deng	Zhensheng Xie	Jiandong Huang

Add: Building 8,Block 2,Baimang Baiwangxin Industrial Park,
Xili Area,Nanshan District,Shenzhen, P.R.China

Tel: 86-755-86139688

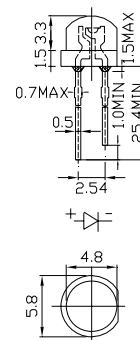
Fax: 86-755-86139001

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Applications:

Indicators
Illuminations
Automobile's Applications

Dimension Drawing



NOTES:

1. ALL DIMENSIONS ARE IN mm. TOLERANCE IS ± 0.25 mm UNLESS OTHERWISE NOTED.
2. AN EPOXY MENISCUS MAY EXTEND ABOUT 1.5mm DOWN THE LEADS.
3. BURR AROUND BOTTOM OF EPOXY MAY BE 0.5 mm MAX.

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Items	Symbol	Absolute maximum Rating	Unit
DC Forward Current	I_F	30	mA
Peak Forward Current*	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	108	mW
Operation Temperature	T_{opr}	$-20 \sim +75$	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-30 \sim +80$	$^\circ\text{C}$
Lead Soldering Temperature	T_{sol}	Max. 260°C for 5 sec Max. (3mm from the base of the epoxy bulb)	

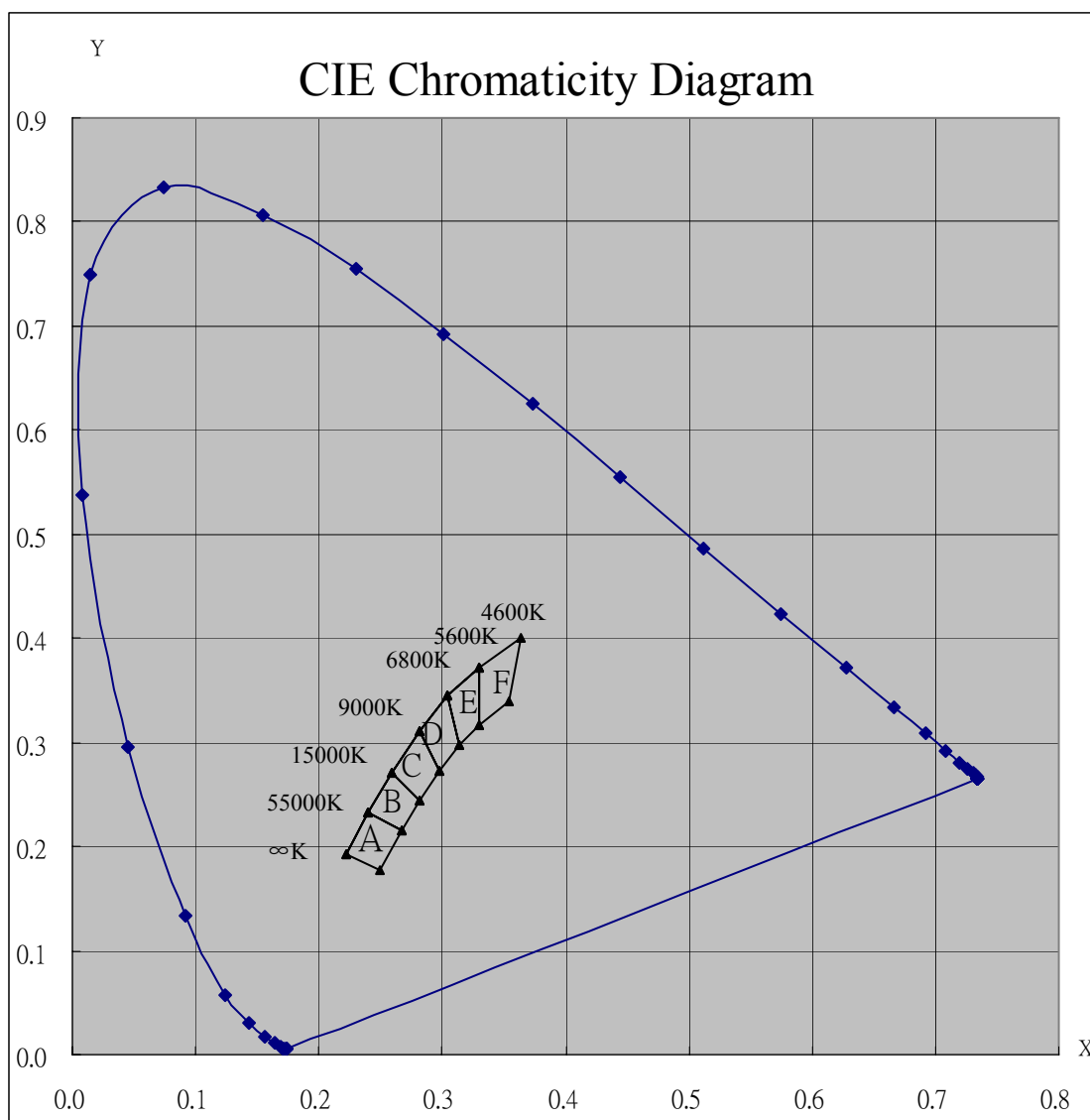
*pulse width ≤ 0.1 msec duty $\leq 1/10$

Typical Electrical & Optical Characteristics ($T_a = 25^\circ\text{C}$)

Items	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F = 20\text{mA}$	---	3.2	3.6	V
Reverse Current	I_R	$V_R = 5\text{V}$	---	---	10	A
Color Temperature	CCT	$I_F = 20\text{mA}$	---	6500	---	K
Chromaticity Coordinates	X	$I_F = 20\text{mA}$	---	0.313	---	---
	Y	$I_F = 20\text{mA}$	---	0.329	---	---
Luminous Intensity	I_v	$I_F = 20\text{mA}$	---	1600	---	mcd
50% Power Angle	20°H-H	$I_F = 20\text{mA}$	---	120	---	deg
	20°V-V	$I_F = 20\text{mA}$	---	---	---	deg

Important Notes:

- 1) All ranks will be included per delivery, rank ratio will be determined by LEDMAN.
- 2) Tolerance of measurement of luminous intensity is $\pm 15\%$.
- 3) Tolerance of measurement of dominant wavelength is $\pm 1\text{nm}$.
- 4) Tolerance of measurement of V_f is $\pm 0.05\text{V}$.
- 5) Packaging methods are available for selection, please refer to “Ledman LED Packaging Standard.” document
- 6) Reliability test conditions, Please refer to “Ledman LED Reliability Test Standards” document.
- 7) How to use Ledman LED product safely, Please refer to “Ledman LED Application Notes” document.
- 8) Specifications are subject to change without notice.



Color Ranks(IF=20mA,Ta=25℃)

Color Ranks		CIE				CCT
A	X	0.2218	0.24	0.267	0.25	55000K-∞K
	Y	0.1928	0.233	0.215	0.178	
B	X	0.24	0.2591	0.2817	0.267	15000K-55000K
	Y	0.233	0.2709	0.2433	0.215	
C	X	0.2591	0.2813	0.2973	0.2817	9000K-15000K
	Y	0.2709	0.31	0.2721	0.2433	
D	X	0.2813	0.305	0.3135	0.2973	6800K-9000K
	Y	0.31	0.345	0.2969	0.2721	
E	X	0.305	0.33	0.33	0.3135	5600K-6800K
	Y	0.345	0.3716	0.317	0.2969	
F	X	0.33	0.3638	0.354	0.33	4600K-5600K
	Y	0.3716	0.4001	0.34	0.317	

Measurement uncertainty of the color coordinates:±0.015

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Typical Optical-Electronic Characteristic Curves:

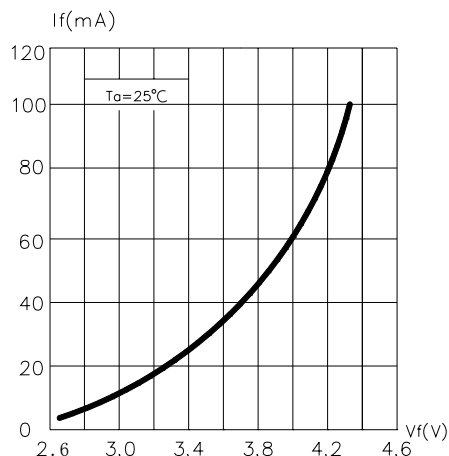


Fig.1 Forward Current vs. Forward Voltage

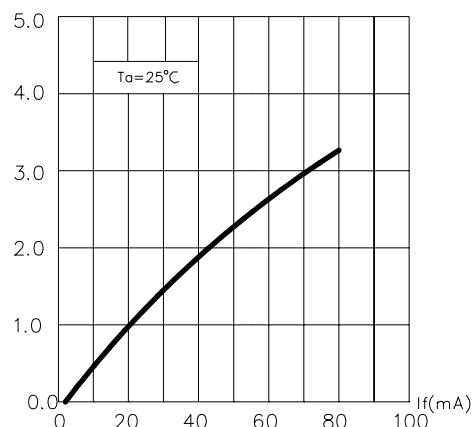


Fig.2 Relative Luminous Intensity vs. Forward Current

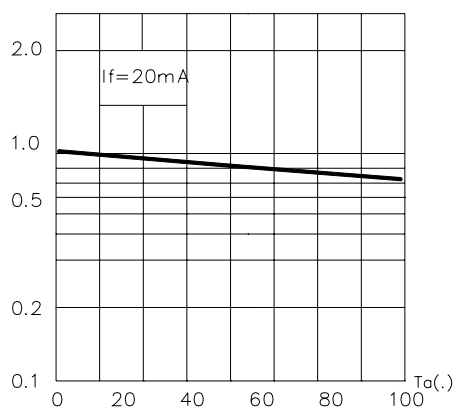


Fig.3 Relative Luminous Intensity vs. Ambient Temperature

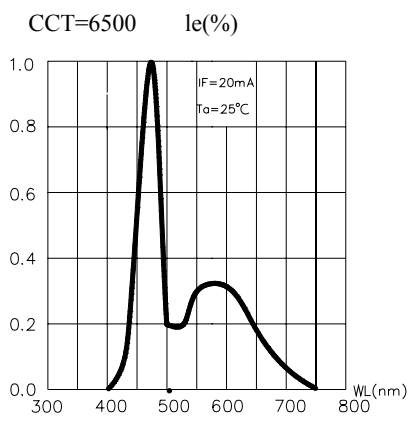


Fig.4 Intensity vs. Wavelength

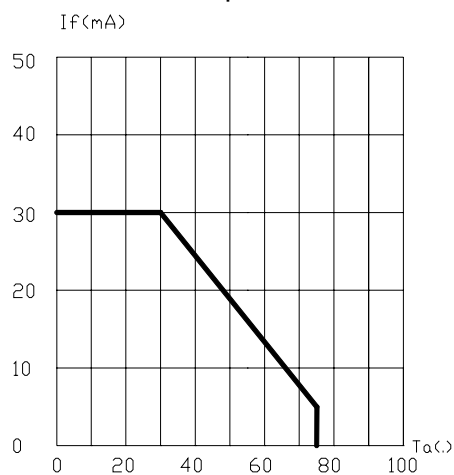


Fig.5 Maximum Forward Current vs. Ambient Temperature

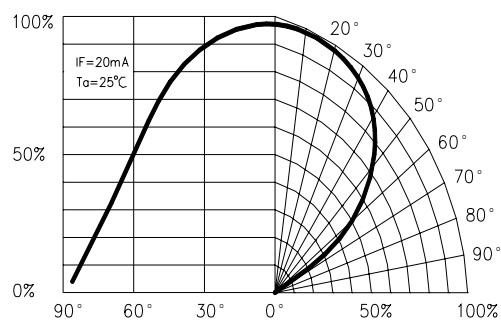


Fig.6 Relative Luminous Intensity vs. Radiation Angle

Items	Signatures	Date	R&D ISSUE
Prepared by	Xiaowei Deng	2009-3-31	
Checked by	Zhensheng Xie	2009-3-31	
Approved by	Jiandong Huang	2009-3-31	