SPECIFICATION FOR I-WITTY LED LAMP

MODEL No : LD-700AWN1-70
DOC No : 01 04OCT04

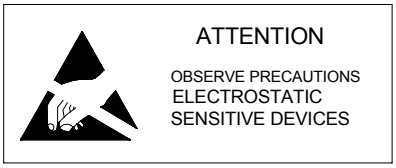
Description:

7 x 7mm, QFN Type,
High Power White LED For Illumination,
Clear Compound Encapsulated.

Dice Material: InGaN

Confirmed
by Customer: _____

Date: _____



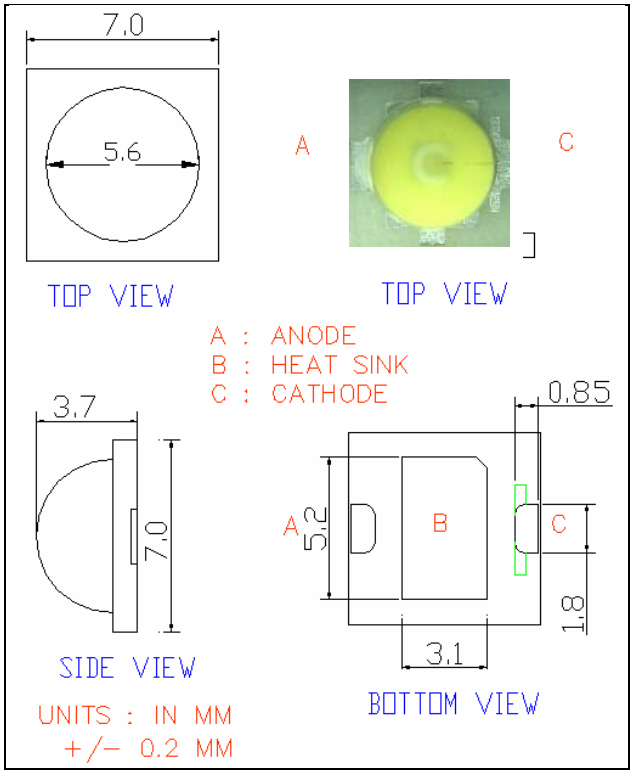
I-WITTY TECHNOLOGY LTD.

Model No.	LD-700AWN1-70
Doc. No.	01 04OCT04

Features

- High luminous flux output for illumination
- Exposed pad design for excellent heat transfer
- Designed for high current operation
- Reflow soldering applicable

Package Outline



Absolute Maximum Ratings at Ta = 25°C (on metal core PCB)*

Items	Symbol	Absolute maximum Rating	Unit
Forward Current	I_F	300	mA
Peak Forward Current**	I_{FP}	500	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	1	W
Operation Temperature	T_{opr}	-20 ~ +85	°C
Storage Temperature	T_{stg}	-20 ~ +85	°C
Junction temperature	T_j	+125	°C
Junction-to-Board***	θ_{jc}	15	°C/W

Metal core PCB defines as good heat transmission substrate (thickness of 2.0mm Al-based PCB in 20x20mm, θ_{jc} <15C/W could do)

** Where pulse width <= 0.1msec, duty cycle <= 1/10 *** Rth test condition: mounted on 2.0mm Al-based PCB in size of 20x20mm

Typical Electrical & Optical Characteristics at Ta = 25°C (on metal core PCB)*

Items	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 300mA		3.5	4.0	V
Reverse Current	I_R	V_R = 5V	---	---	10	μA
Luminous Flux	lumen	I_F = 300mA	13	20	---	lm
50% Power Angle	2 θ½	I_F = 300mA	---	70	---	deg
Chromaticity Coordinates	x	I_F = 300mA	---	0.3	---	---
	y	I_F = 300mA	---	0.3	---	---

Luminous Flux (lm)

Ranks Combination (I_F = 300mA)	G	H	I	J	
Rank	≥13	≥17	≥21	≥25	

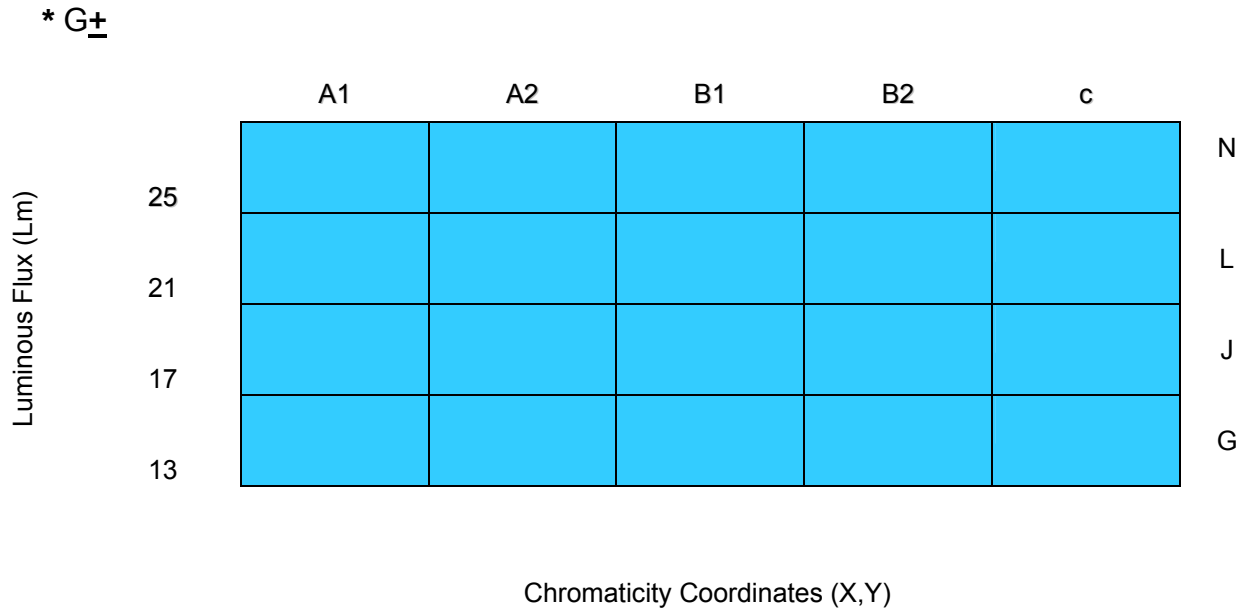
Model No.	LD-700AWN1-70
Doc. No.	01 04OCT04

Standard bins for LD-700AWN1-70 (I_F = 300mA):

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

Orders for LD-700AWN1-70 may be filled with any or all bins contained as below.

All Luminous Flux –Lm , V_F & Chromaticity Coordinates –(X,Y) values shown and specified are at I_F =300mA.



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

Rank		A1				A2				B1			
Chromaticity Coordinates	x	0.245	0.264	0.280	0.264	0.264	0.283	0.296	0.280	0.283	0.307	0.313	0.296
	y	0.229	0.267	0.248	0.220	0.267	0.305	0.276	0.248	0.305	0.337	0.297	0.276

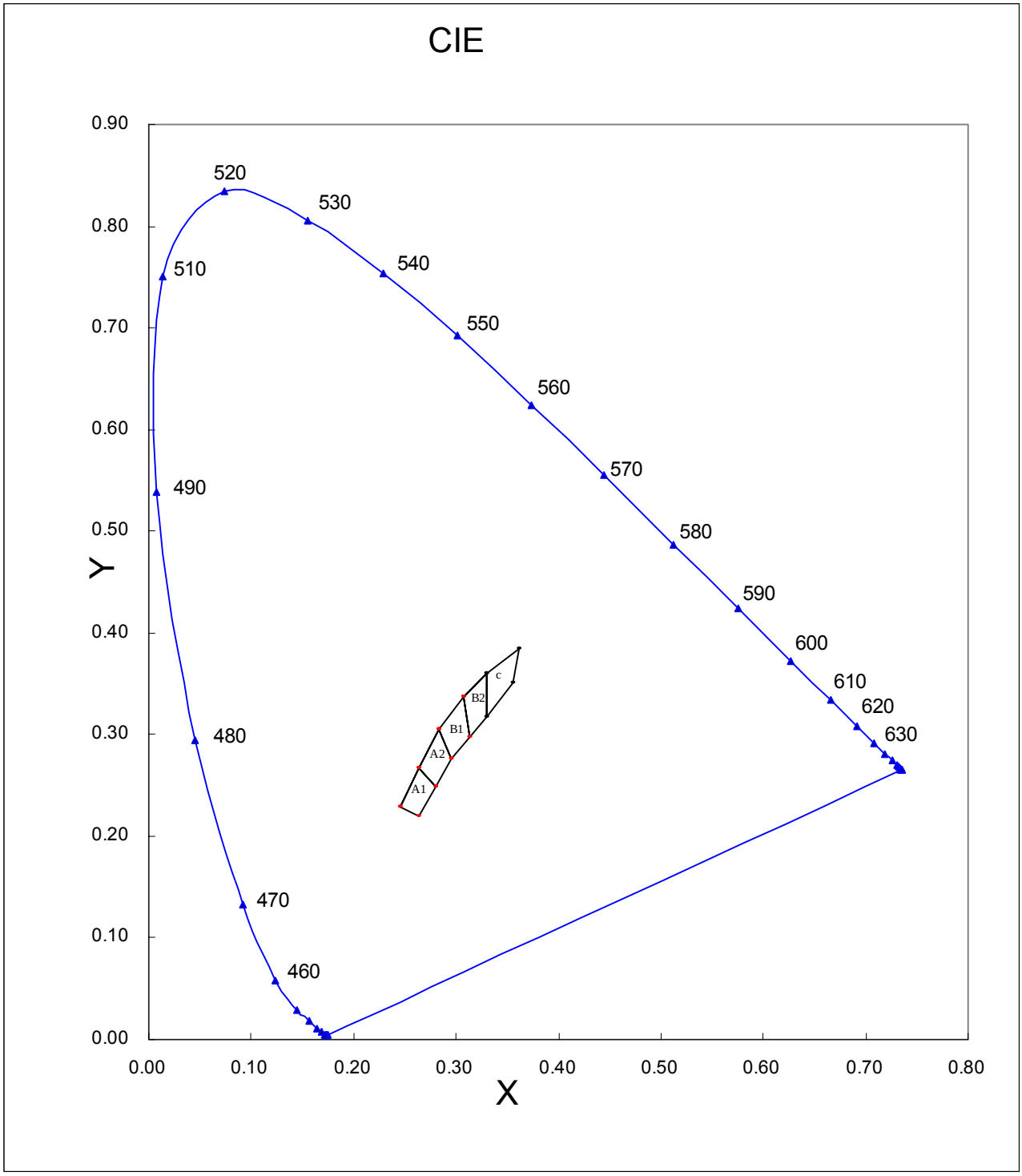
Rank		B2				c			
Chromaticity Coordinates	x	0.307	0.330	0.330	0.313	0.330	0.361	0.356	0.330
	y	0.337	0.360	0.318	0.297	0.360	0.385	0.351	0.318

Important Notes:

1) All ranks will be included per delivery, rank ratio will be determined by I-WITTY
2) Pb content <1000PPM.
3) The measurement tolerance of luminous flux is ±10%.
4) The measurement tolerance of the Color Coordinates is ± 0.05.
5) The measurement tolerance of Vf is ±0.1 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.

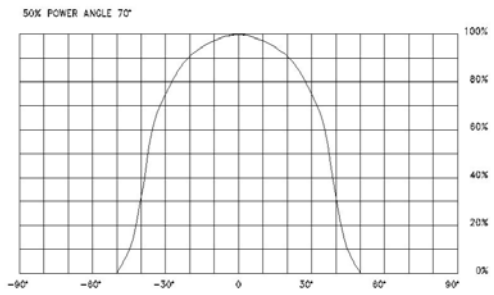
Model No.	LD-700AWN1-70
Doc. No.	01 04OCT04

CIE Chromaticity Diagram

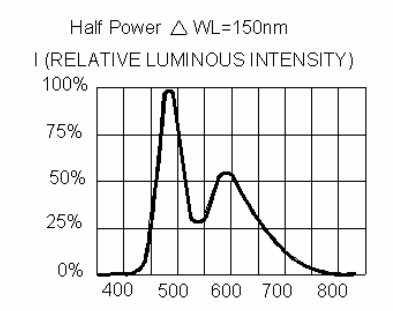


Model No.	LD-700AWN1-70
Doc. No.	01 04OCT04

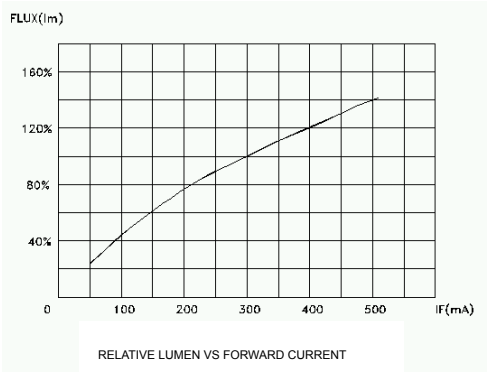
Graphs



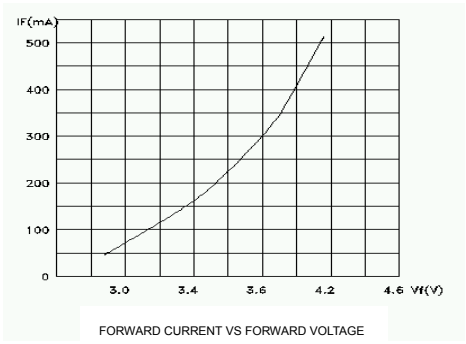
FAR FIELD PATTERN



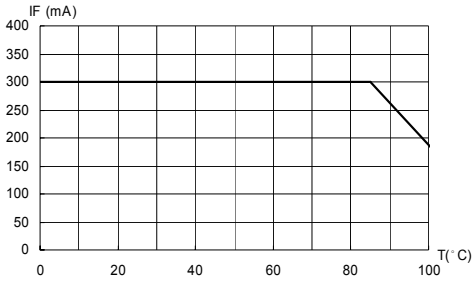
RELATIVE LUMINOUS INTENSITY VS WAVELENGTH



RELATIVE LUMEN VS FORWARD CURRENT



FORWARD CURRENT VS FORWARD VOLTAGE



MAXIMUM FORWARD DC CURRENT
VS, AMBIENT TEMPERATURE

Items	Signatures	Date	Revision History	
Prepared by	Anthony Cheung	04OCT04	DOC. No.	CHANGE DESCRIPTION
Checked by	Anthony Cheung	04OCT04		
Approved by	Thomson	04OCT04		
ECN#	ECN-H20040272			

Data is subject to change without prior notice.

Obsoletes Doc: ---.