

Edixeon Amber HB Series Datasheet



Features :

- More energy efficient than incandescent and most halogen lamps
- Low voltage operation
- Instant light
- Long operating life

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General Information

Introduction

Edixeon Amber HB series emitters are one of the highest power LEDs in the world by Edison Opto. Edixeon Amber HB series emitters are designed to satisfy more and more Solid-State Lighting High Power signaling, signage and entertainment applications.

Ordering Code Format

2
X1
E
X2
A 1
X3
0 1
X4
A X
X5
1 9
X6
0 0 0
X7
0 0 2
X8

X1		X2		X3		X4		X5	
Type	Component	Series		Wattage		Color			
2	Emitter	E	Edixeon	A1	A1 Series	01	1W	AX	Amber

X6		X7		X8	
Internal code	PCB Board	Serial Number			
19	-	000	-	-	-

Absolute Maximum Ratings

Parameter	Symbol	Value	Units
DC Forward Current	I_F	350	mA
Peak Pulsed Current; ($t_p \leq 100\mu s$, Duty cycle=0.25)	I_{pulse}	700	mA
Reverse Voltage	V_R	5	V
Drive Voltage	V_D	5	V
LED Junction Temperature	T_J	125	°C
Operating Temperature	-	-30 ~ +110	°C
Storage Temperature	-	-40 ~ +120	°C
ESD Sensitivity (HBM)	-	2,000	V
Manual Soldering Time at 260°C(Max.)	-	5	Sec.

Notes:

1. Proper current derating must be observed to maintain junction temperature below the maximum at all time.
2. LEDs are not designed to be driven in reverse bias.
3. t_p : Pulse width time

Characteristics

Parameter	Symbol	Value	Units
Viewing Angle	$2\theta_{1/2}$	120	Degree
Thermal resistance	-	10	°C/W
$\Delta V_f / \Delta T$	$\Delta V_f / \Delta T$	-2	mV/°C
Wavelength	λ_d	588-592	nm
JEDEC Moisture Sensitivity	-	Level 2a Floor Life Conditions: $\leq 30^\circ C$ / 60% RH Soak Requirements(Standard) Time (hours): 120+1/-0 Conditions: $60^\circ C$ / 60% RH	-

Notes:

1. Wavelength is measured with an accuracy of $\pm 0.5nm$.
2. Viewing angle is measured with an accuracy of ± 10 Degree.
3. CIE_x/y tolerance: ± 0.005 .

Luminous Flux Characteristic

Luminous Flux Characteristics at $I_f=350\text{mA}$, $T_j=25^\circ\text{C}$

Color	Wattage (W)	Group	Min. Luminous Flux (lm)	Max. Luminous Flux (lm)	Forward Current (mA)	Order Code
Amber	1	T0	66.5	86.5	350	2EA101AX19000002
		U0	86.5	110		

Note:

Flux is measured with an accuracy of $\pm 10\%$.

Voltage Bin Structure

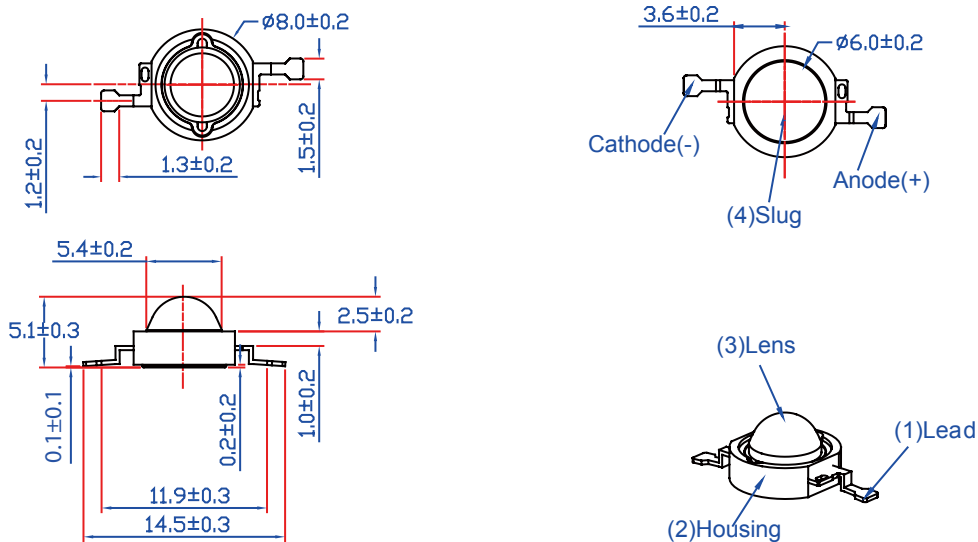
Group	Min. Voltage (V)	Max. Voltage (V)
V01	2.8	3.1
V02	3.1	3.4
V03	3.4	3.7


Note:

Forward voltage measurement allowance is $\pm 0.06\text{V}$.

Mechanical Dimensions

Emitter Type Dimension



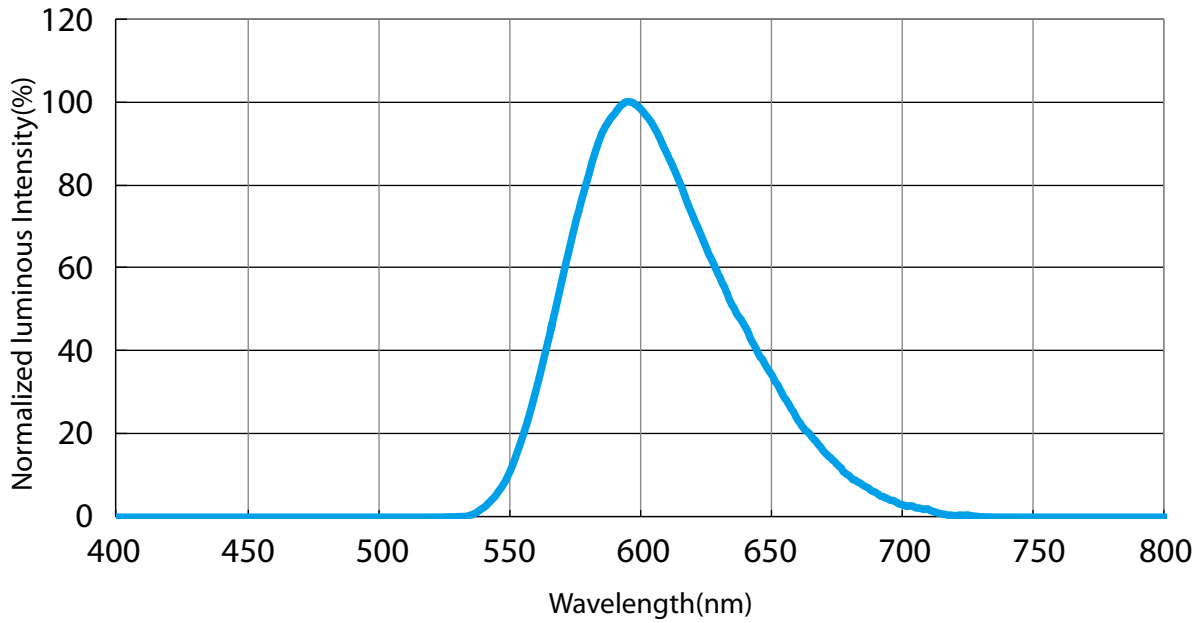
Emitting Color	Slug at the bottom of the electrode	Circuit
Amber	No electrode	

Notes:

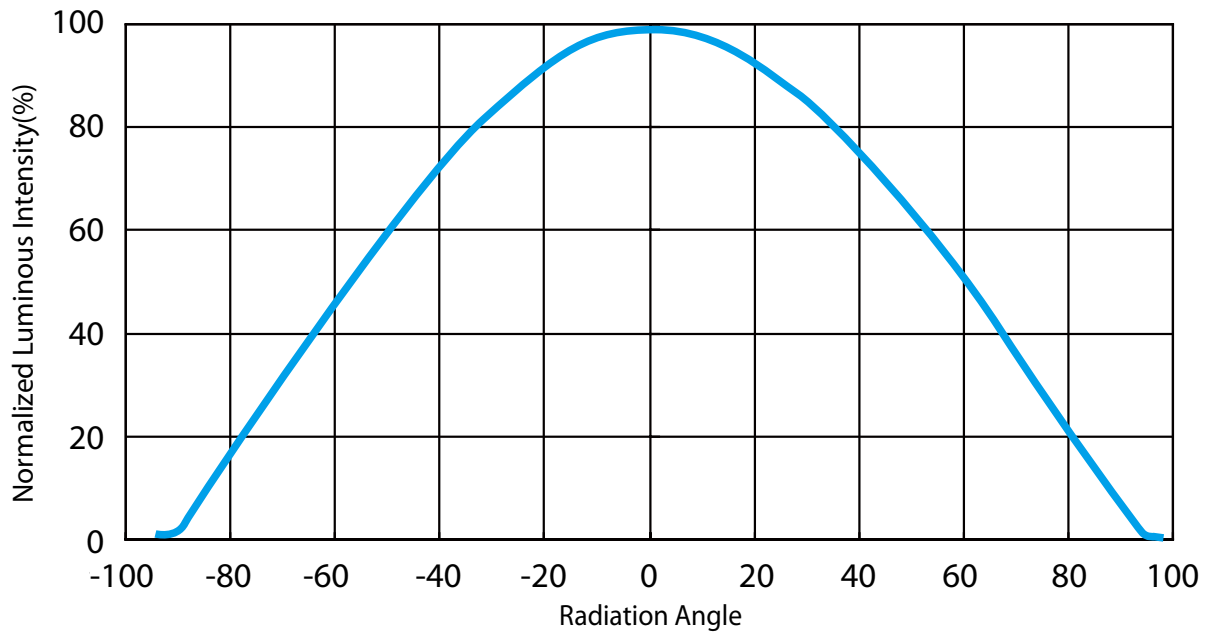
1. All dimensions are in mm.
2. It is strongly recommended that the temperature of lead doesn't exceed 55°C.
3. It is important that the slug can't contact aluminum surface, It is strongly recommended that there should coat a uniform electrically isolated heat dissipation film on the aluminum surface.

Characteristic curve

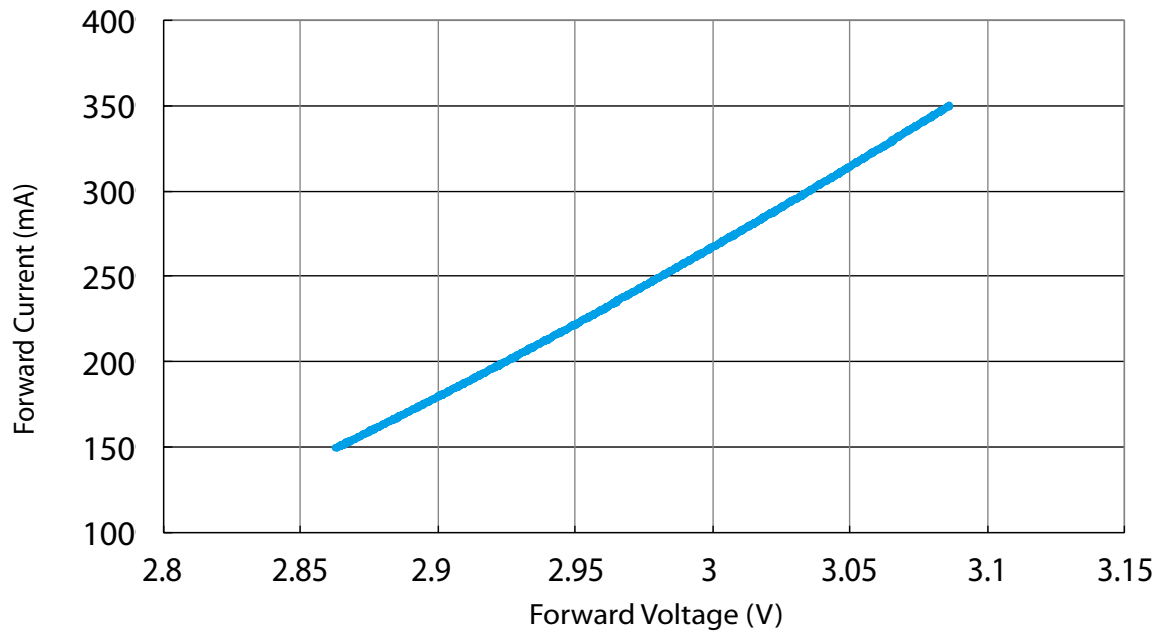
Color Spectrum



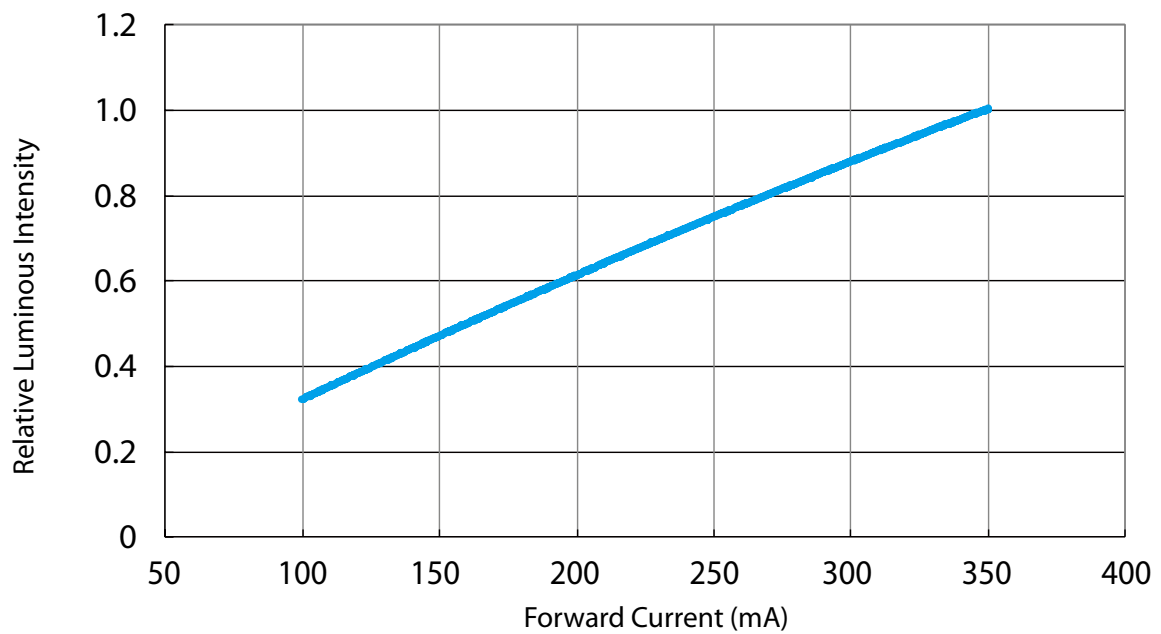
Beam Pattern



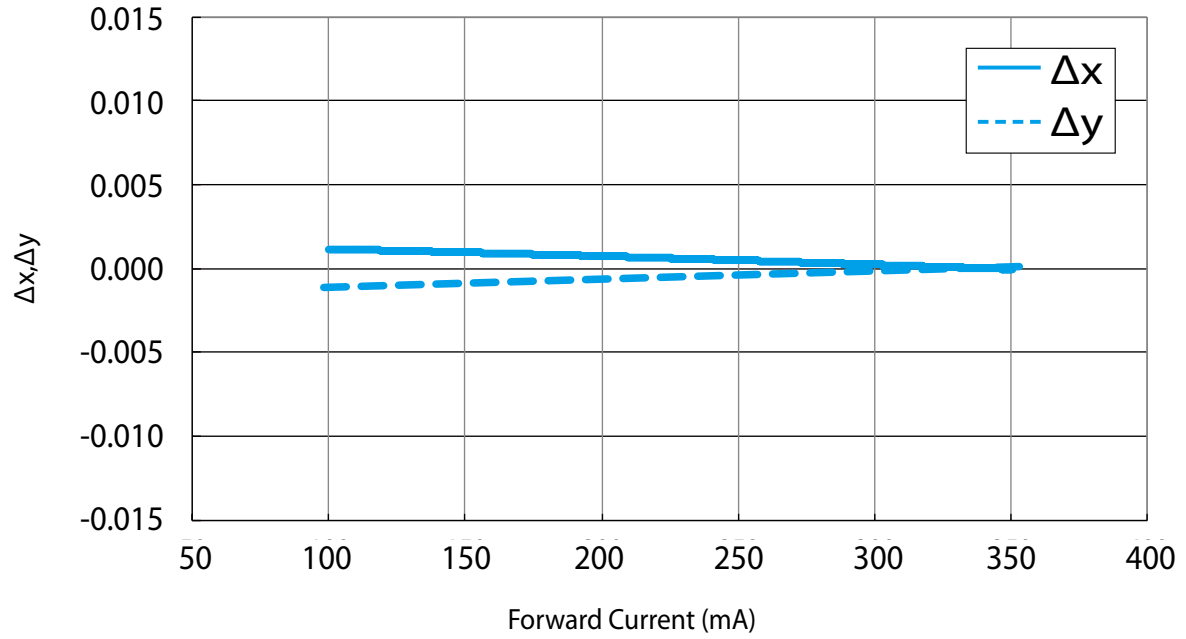
Forward Current vs. Forward Voltage



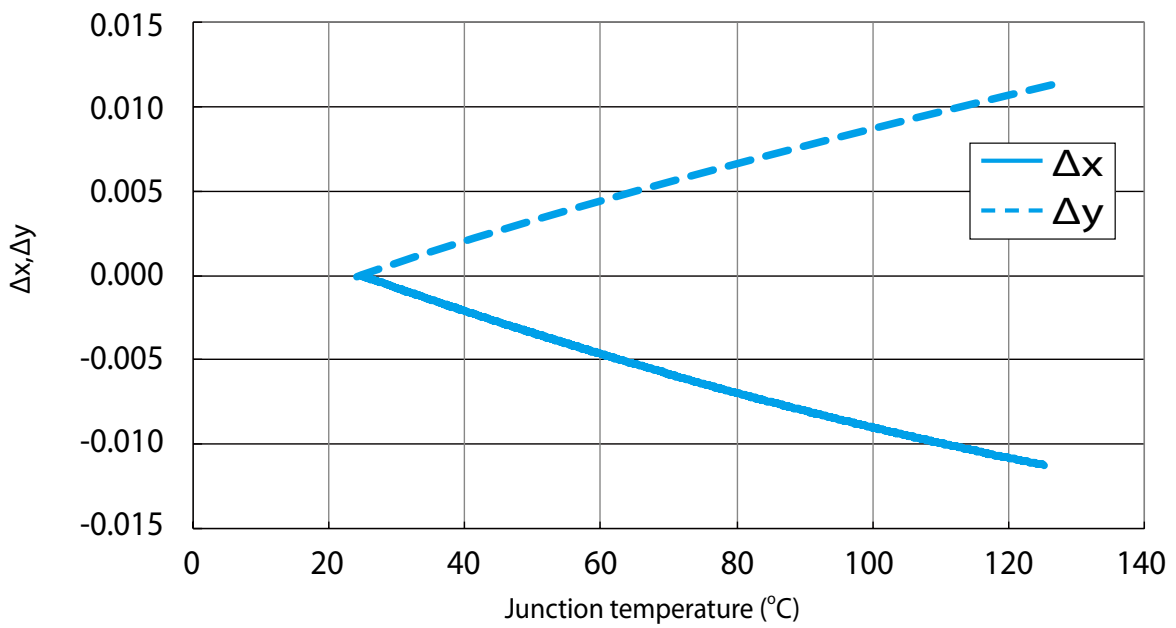
Relative Luminous Intensity vs. Forward Current



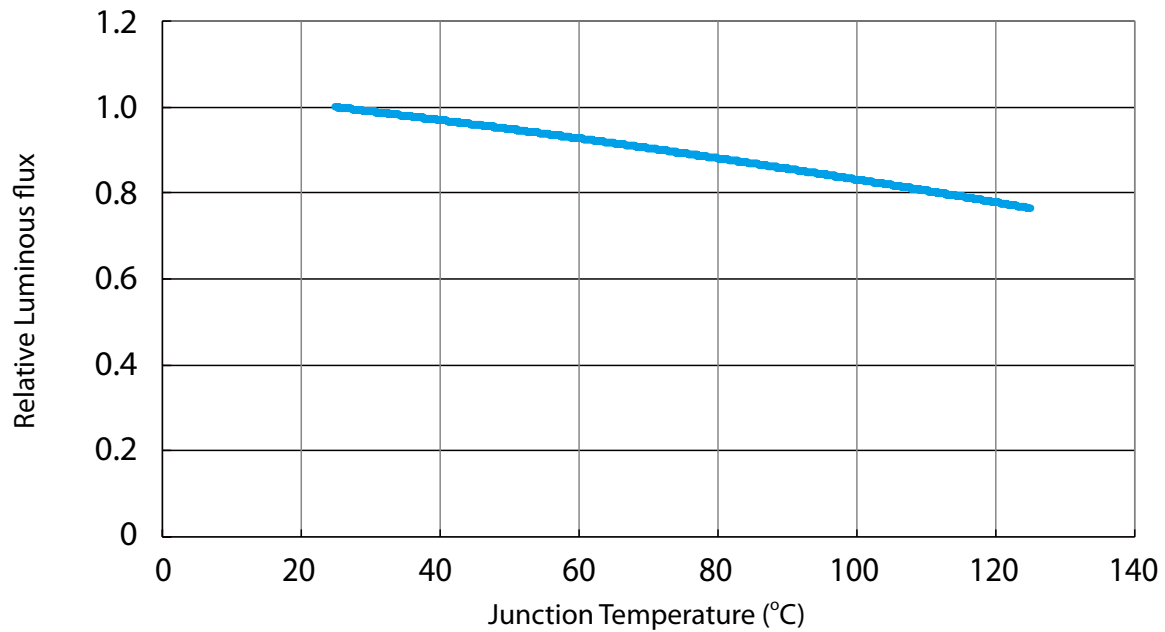
$\Delta x, \Delta y$ vs. Forward Current



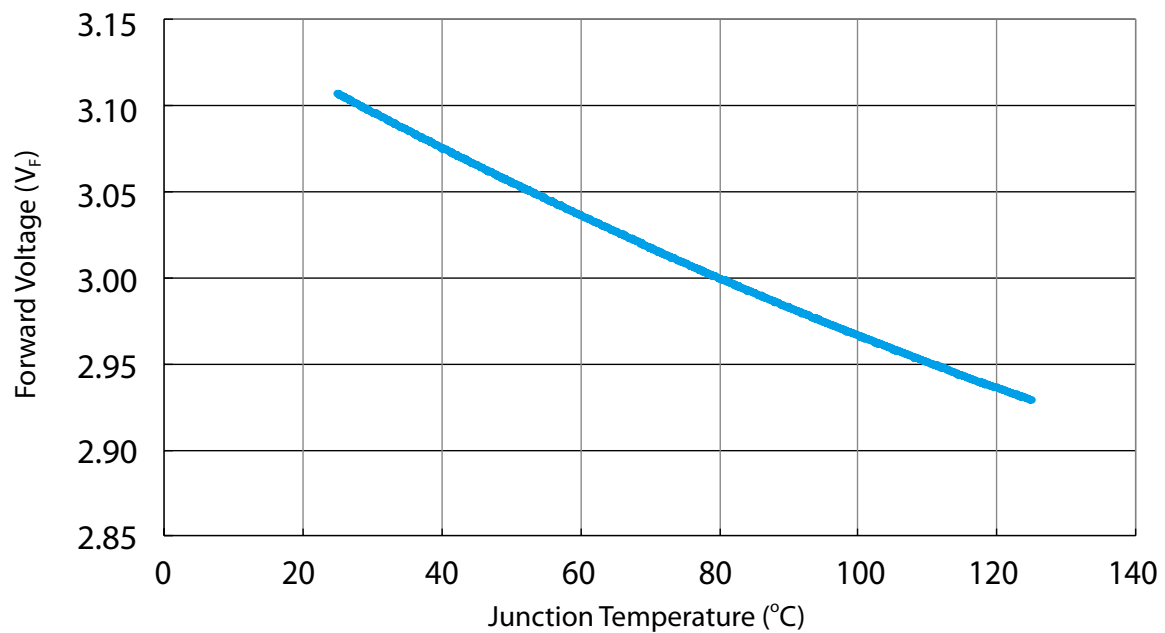
$\Delta x, \Delta y$ vs. Junction Temperature



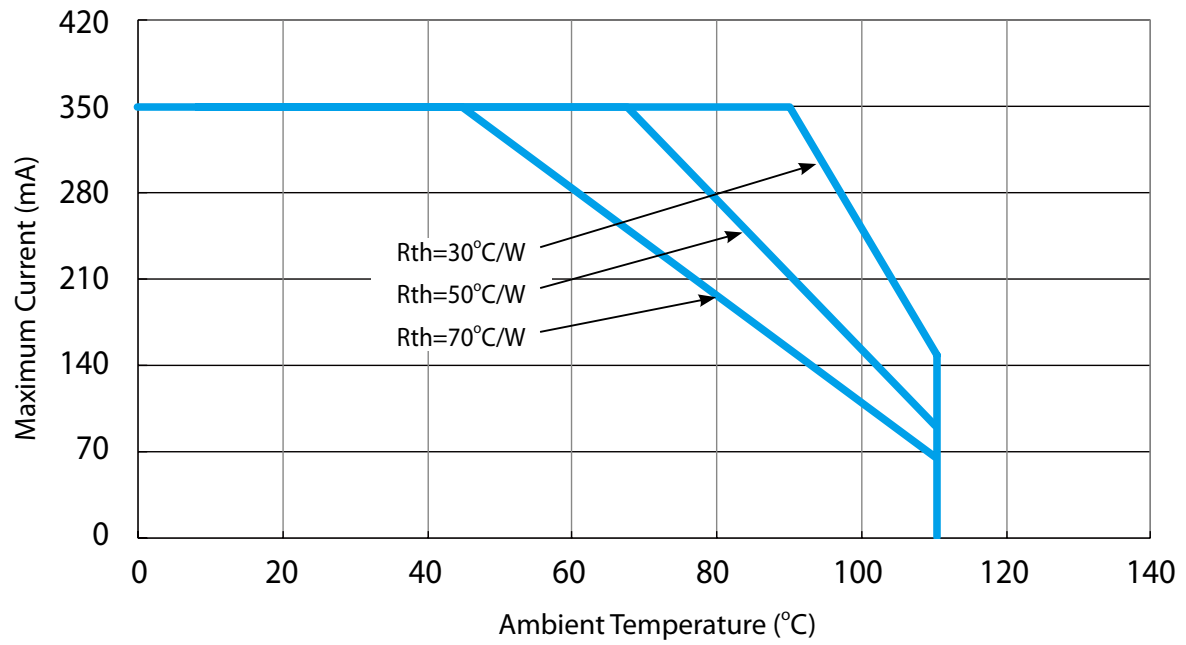
Relative Luminous Flux vs. Junction Temperature



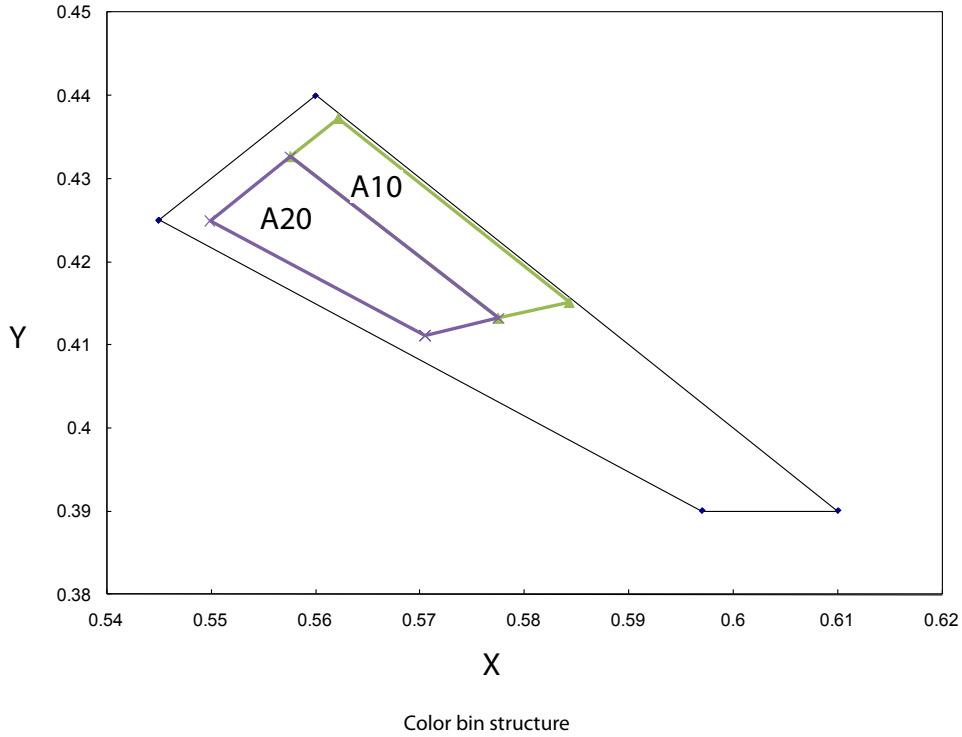
Forward Voltage vs. Junction Temperature



Maximum Current vs. Ambient Temperature



Color Bins



Amber HB Series bin Coordinate

Group	X	Y
A10	0.5622	0.4372
	0.5576	0.4326
	0.5775	0.4132
	0.5843	0.4151
A20	0.5705	0.4111
	0.5775	0.4132
	0.5576	0.4326
	0.5499	0.4249

Reliability

NO .	Test Item	Test Condition	Remark
1	Temperature Cycle	-40°C~100°C 30, 30, mins	100 Cycle
2	Thermal Shock	-40°C~100°C 15, 15 mins \leq 10 sec	100 Cycle
3	Resistance to Soldering Heat	T _{SOL} =260°C, 30 sec	3 times
4	Moisture Resistance	25°C~65°C 90% RH 24 hrs / 1 cycle	10 Cycle
5	High-Temperature Storage	T _A =100°C	1,000 hrs
6	Humidity Heat Storage	T _A =85°C RH=85%	1,000 hrs
7	Low-Temperature Storage	T _A =-40°C	1,000 hrs
8	Operation Life test	25°C	1,000 hrs
9	High Temperature Operation Life test	85°C	1,000 hrs
10	High Humidity Heat Life Test	85°C, 85%RH	1,000 hrs
11	ON/OFF Test	30 sec ON, 30 sec OFF	10W times

Failure Criteria

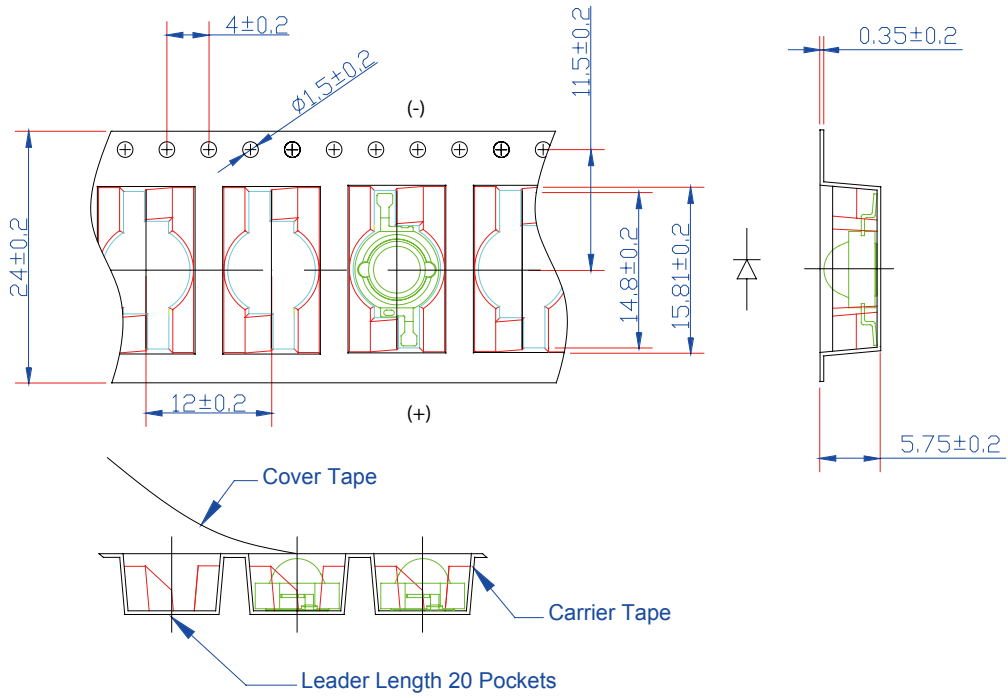
Item	Criteria for Judgment	
	Min.	Max.
Lumen Maintenance	85%	-
$\Delta u'v'$	-	0.006
Forward Voltage	-	Initial Data x 1.1
Reverse Current	-	10 μ A
Resistance to Soldering Heat	No dead lamps or visual damage	

Cautions

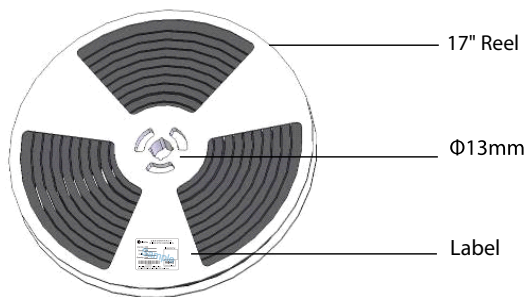
LED avoids being stored and lighted in the environment containing sulfur. Some materials, such as seals, printing ink, enclosure and adhesives, may contain sulfur, avoiding the exposure in acid or halogen environment.

Product Packaging Information

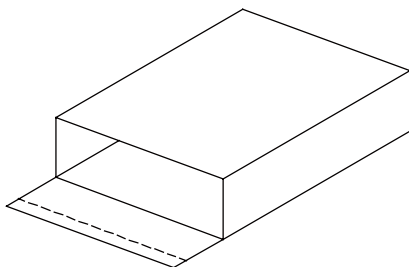
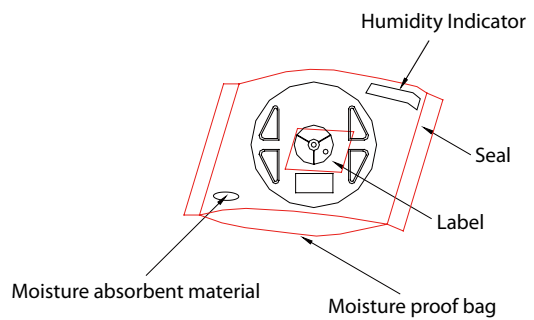
Tape and Reel Dimension



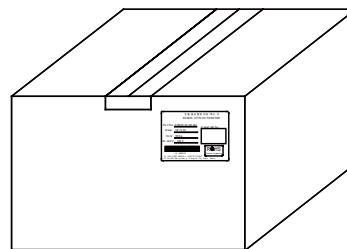
Edixeon Emitter



1000pcs LEDs inside



2 bags in 1 box



5 boxes in 1 carton

Note : 445*410*415 (Tolerance : ±5mm)

Revision History

Versions	Description	Release Date
1	Establish order code information	2015/03/06
2	Add the cautions of reliability	2017/05/26

About Edison Opto

Edison Opto is a leading manufacturer of high power LED and a solution provider experienced in LDMS. LDMS is an integrated program derived from the four essential technologies in LED lighting applications- Thermal Management, Electrical Scheme, Mechanical Refinement, Optical Optimization, to provide customer with various LED components and modules. More Information about the company and our products can be found at www.edison-opto.com

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