

Edixeon A1 Series Datasheet



Features :

- Various colors
- 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 A1 series emitters are one of the highest flux LEDs in the world by Edison Opto. Edixeon A1 series emitters are designed to satisfy more and more Solid-State lighting High Power LED applications for brilliant world such as flash light, indoor and outdoor decoration light. Unlike most fluorescent sources, Edixeon contains no mercury and has more energy efficient than other incandescent light source.

Ordering Code Format

2
X1
E
X2
A 1
X3
0 1
X4
x W
X5
x x
X6
0 0 0
X7
x x x
X8

X1		X2		X3		X4		X5	
Type		Component		Series		Wattage		Color	
2	Emitter	E	Edixeon	A1	A1 Series	01	1W	CW	Cool White
								NW	Neutral White
								WW	Warm White

X6		X7		X8	
Internal code		PCB Board		Serial Number	
05	-	000	-	-	-
06	-				

Absolute Maximum Ratings

Parameter	Symbol	Value	Units
DC Forward Current	I_F	350	mA
Peak Pulsed Current; (tp≤100μs, Duty cycle=0.25)	I_{pulse}	500	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. tp: Pulse width time

Characteristics

Parameter	Symbol	Value	Units
Viewing Angle	(Typ.) $2\theta_{1/2}$	135	Degree
Forward voltage	(Typ.) V_F	3.4	V
Thermal resistance	-	11	°C/W
$\Delta V_F/\Delta T$	$\Delta V_F/\Delta T$	-2	mV/°C
CCT	λ_d	CW : 5000-10000 NW : 3800-5000 WW : 2670-3800	K
CRI	-	CW : 68 NW : 75 WW : 80	-
JEDEC Moisture Sensitivity	-	Level 2a Floor Life Conditions: ≤30°C / 60% RH Soak Requirements(Standard) Time (hours): 120+1/-0 Conditions: 60°C / 60% RH	-

Notes:

1. CIE_x/y tolerance: ±0.005
2. Viewing angle is measured with an accuracy of ± 5%.
3. Color Rendering index CRI tolerance: ± 2.

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)	Order Code
Cool White	1	U2	90	100	2EA101CW06000001
		U3	100	110	
		V1	110	120	
Neutral White	1	T3	80	86.5	2EA101NW05000001
		U1	86.5	90	
		U2	90	100	
Warm White	1	T2	70	80	2EA101WW05000001
		T3	80	86.5	
		U1	86.5	90	

Notes:

1. Flux is measured with an accuracy of $\pm 10\%$.
2. All Cool White, Neutral White, Warm White emitters are built with InGaN.

Voltage Bin Structure

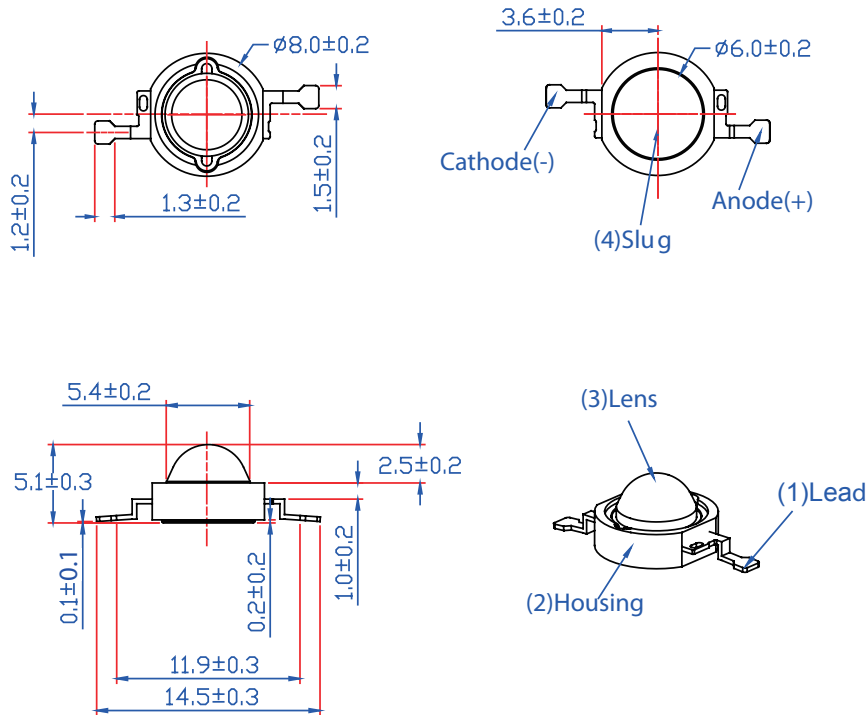
Group	Min. Voltage (V)	Max. Voltage (V)
V01	2.8	3.1
V02	3.1	3.4
V03	3.4	3.7
V04	3.7	4.0
V05	3.4	3.7


Note:

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

Mechanical Dimensions

Emitter Type Dimension



Emitter Color	Slug at the bottom of the electrode	Circuit
W/H/X	No electrode	

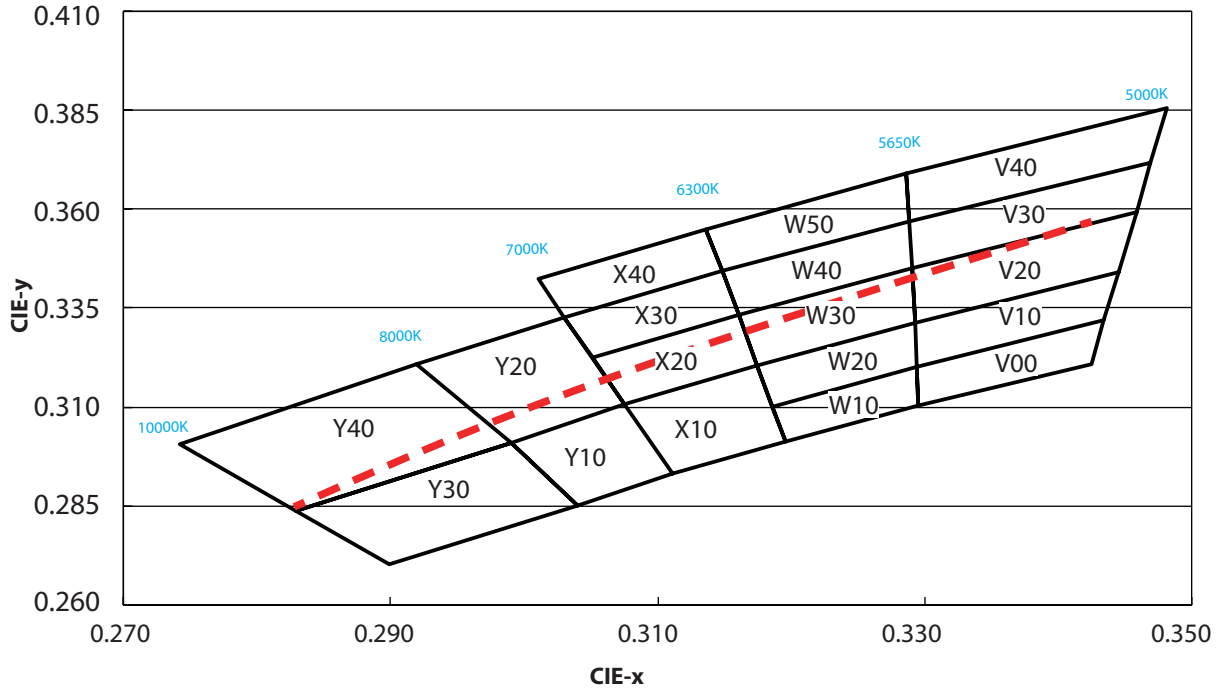
Edixeon A1 series dimensions and circuits

Notes:

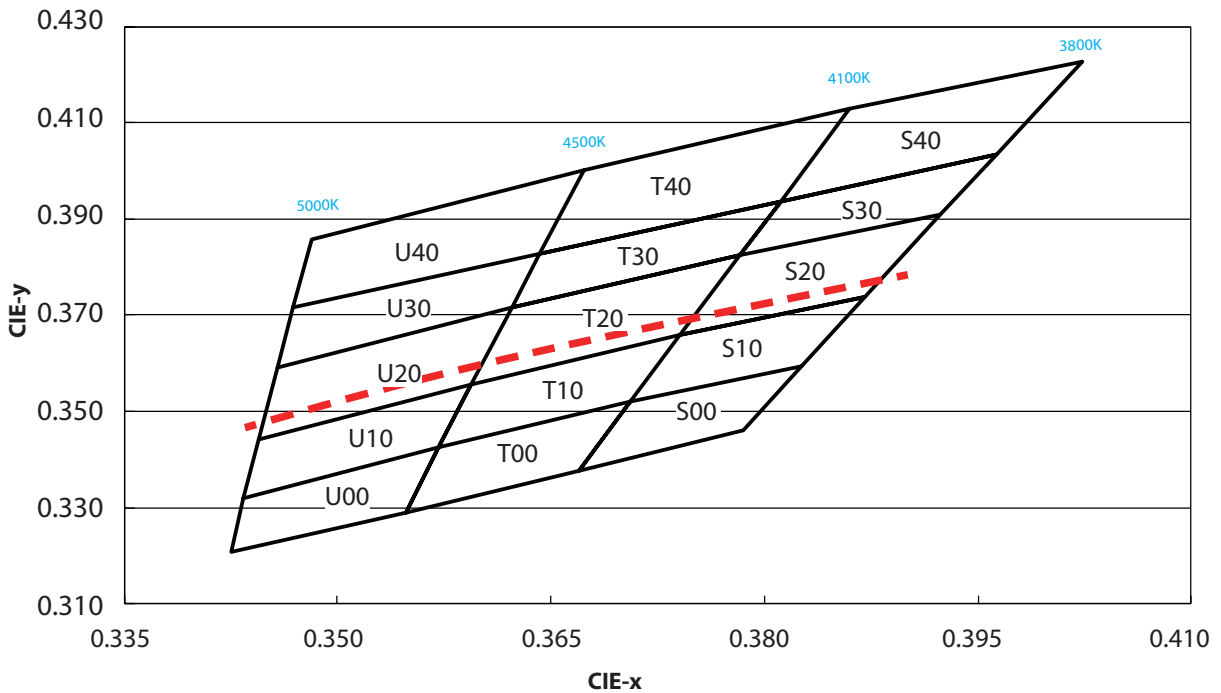
1. All dimensions are in mm.
2. It is strongly recommended that the temperature of lead doesn't exceed 55°C.
3. Lambertian and side emitting series slug has polarity as anode.
4. It is important that the slug can't contact aluminum surface, It is strongly recommended that there should coat a uniform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

Color BIN code

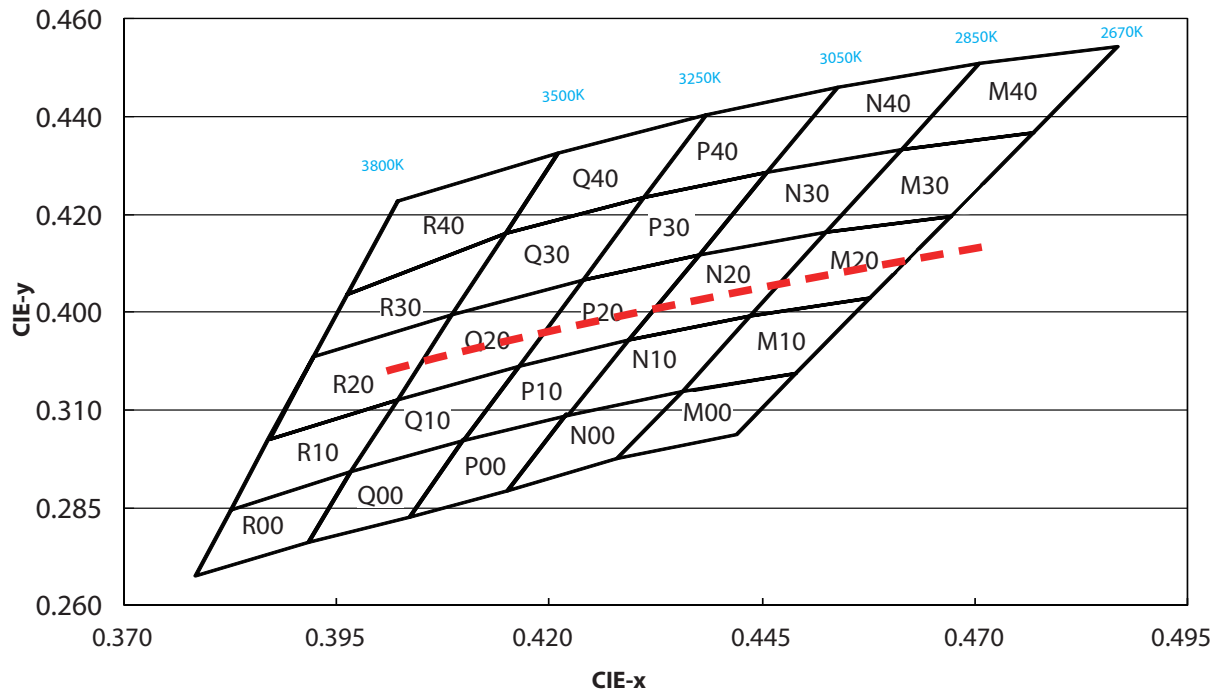
Cool White



Neutral White



Warm White



Cool White

Y10		Y20		Y30		Y40	
X	Y	X	Y	X	Y	X	Y
0.3040	0.2850	0.2990	0.3010	0.3040	0.2850	0.2920	0.3210
0.2990	0.3010	0.2920	0.3210	0.2899	0.2703	0.2742	0.3007
0.3076	0.3108	0.3031	0.3327	0.2830	0.2838	0.2830	0.2838
0.3112	0.2932	0.3076	0.3108	0.2990	0.3010	0.2990	0.3010

X10		X20		X30		X40	
X	Y	X	Y	X	Y	X	Y
0.3076	0.3108	0.3076	0.3108	0.3052	0.3224	0.3031	0.3327
0.3174	0.3204	0.3052	0.3224	0.3031	0.3327	0.3011	0.3422
0.3196	0.3013	0.3160	0.3332	0.3148	0.3444	0.3136	0.3550
0.3112	0.2932	0.3175	0.3204	0.3160	0.3332	0.3148	0.3444

W10		W20		W30		W40		W50	
X	Y	X	Y	X	Y	X	Y	X	Y
0.3294	0.3202	0.3292	0.3313	0.3290	0.3451	0.3290	0.3451	0.3148	0.3444
0.3295	0.3105	0.3294	0.3202	0.3292	0.3313	0.3160	0.3332	0.3136	0.3550
0.3196	0.3013	0.3186	0.3102	0.3175	0.3204	0.3148	0.3444	0.3286	0.3690
0.3186	0.3102	0.3175	0.3204	0.3160	0.3332	0.3288	0.3569	0.3288	0.3569

V00		V10		V20		V30		V40	
X	Y	X	Y	X	Y	X	Y	X	Y
0.3434	0.3320	0.3292	0.3313	0.3292	0.3313	0.3290	0.3451	0.3288	0.3569
0.3425	0.3208	0.3444	0.3442	0.3290	0.3451	0.3288	0.3569	0.3286	0.3690
0.3295	0.3105	0.3434	0.3320	0.3458	0.3592	0.3469	0.3717	0.3481	0.3856
0.3294	0.3200	0.3294	0.3200	0.3444	0.3442	0.3458	0.3592	0.3469	0.3717

Neutral White

U00		U10		U20		U30		U40	
X	Y	X	Y	X	Y	X	Y	X	Y
0.3571	0.3426	0.3444	0.3442	0.3622	0.3716	0.3642	0.3829	0.3642	0.3829
0.3548	0.329	0.3434	0.332	0.3594	0.3557	0.3622	0.3716	0.3673	0.4003
0.3425	0.3208	0.3571	0.3426	0.3444	0.3442	0.3458	0.3592	0.3481	0.3856
0.3434	0.332	0.3594	0.3557	0.3458	0.3592	0.3469	0.3717	0.3469	0.3717

T00		T10		T20		T30		T40	
X	Y	X	Y	X	Y	X	Y	X	Y
0.3706	0.3520	0.3594	0.3557	0.3622	0.3716	0.3642	0.3829	0.3673	0.4003
0.3670	0.3377	0.3571	0.3426	0.3783	0.3825	0.3811	0.3937	0.3860	0.4130
0.3548	0.3290	0.3706	0.3520	0.3741	0.3658	0.3783	0.3825	0.3811	0.3937
0.3571	0.3426	0.3741	0.3658	0.3594	0.3557	0.3622	0.3716	0.3642	0.3829

S00		S10		S20		S30		S40	
X	Y	X	Y	X	Y	X	Y	X	Y
0.3826	0.3595	0.3741	0.3658	0.3783	0.3825	0.3783	0.3825	0.3860	0.4130
0.3785	0.3460	0.3871	0.3739	0.3924	0.3909	0.3811	0.3937	0.4023	0.4228
0.3670	0.3377	0.3826	0.3595	0.3871	0.3739	0.3963	0.4035	0.3963	0.4035
0.3706	0.3520	0.3706	0.3520	0.3741	0.3658	0.3924	0.3909	0.3811	0.3937

Warm White

R00		R10		R20		R30		R40	
X	Y	X	Y	X	Y	X	Y	X	Y
0.3966	0.3673	0.3871	0.3739	0.3924	0.3909	0.4086	0.3995	0.4023	0.4228
0.3917	0.3530	0.4021	0.3822	0.3871	0.3739	0.3924	0.3909	0.4209	0.4326
0.3785	0.3460	0.3966	0.3673	0.4021	0.3822	0.3963	0.4035	0.4148	0.4161
0.3826	0.3595	0.3826	0.3595	0.4086	0.3995	0.4148	0.4161	0.3963	0.4035

Q00		Q10		Q20		Q30		Q40	
X	Y	X	Y	X	Y	X	Y	X	Y
0.4100	0.3740	0.4165	0.3890	0.4086	0.3995	0.4086	0.3995	0.4385	0.4404
0.4035	0.3580	0.4100	0.3738	0.4240	0.4065	0.4148	0.4161	0.4312	0.4234
0.3917	0.3530	0.4021	0.3822	0.4165	0.3890	0.4312	0.4234	0.4148	0.4161
0.3966	0.3673	0.3966	0.3673	0.4021	0.3822	0.4240	0.4065	0.4209	0.4326

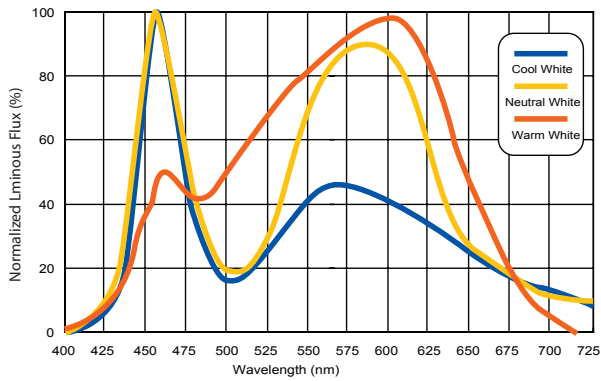
P00		P10		P20		P30		P40	
X	Y	X	Y	X	Y	X	Y	X	Y
0.4220	0.3790	0.4294	0.3943	0.4240	0.4065	0.4312	0.4234	0.4385	0.4404
0.4150	0.3635	0.4221	0.3790	0.4376	0.4116	0.4456	0.4287	0.4538	0.4460
0.4035	0.3580	0.4100	0.3738	0.4294	0.3943	0.4376	0.4116	0.4456	0.4287
0.4100	0.3740	0.4165	0.3890	0.4165	0.3890	0.4240	0.4065	0.4312	0.4234

N00		N10		N20		N30		N40	
X	Y	X	Y	X	Y	X	Y	X	Y
0.4100	0.3740	0.4165	0.3890	0.4086	0.3995	0.4086	0.3995	0.4385	0.4404
0.4035	0.3580	0.4100	0.3738	0.4240	0.4065	0.4148	0.4161	0.4312	0.4234
0.3917	0.3530	0.4021	0.3822	0.4165	0.3890	0.4312	0.4234	0.4148	0.4161
0.3966	0.3673	0.3966	0.3673	0.4021	0.3822	0.4240	0.4065	0.4209	0.4326

M00		M10		M20		M30		M40	
X	Y	X	Y	X	Y	X	Y	X	Y
0.4490	0.3875	0.4436	0.3991	0.4525	0.4162	0.4614	0.4333	0.4705	0.4508
0.4420	0.3750	0.4577	0.4029	0.4671	0.4196	0.4767	0.4366	0.4866	0.4542
0.4280	0.3700	0.4490	0.3875	0.4577	0.4029	0.4671	0.4196	0.4767	0.4366
0.4370	0.3840	0.4356	0.3837	0.4436	0.3991	0.4525	0.4162	0.4614	0.4333

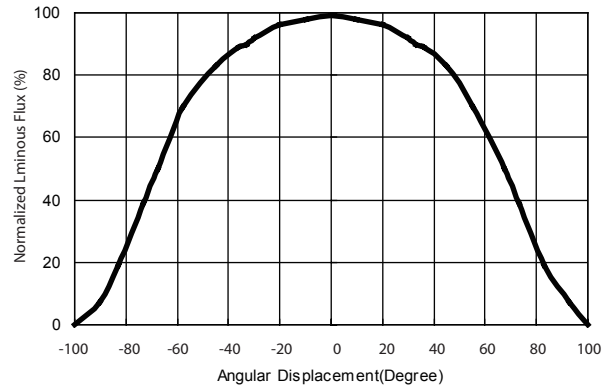
Characteristic Curve

Spectrum



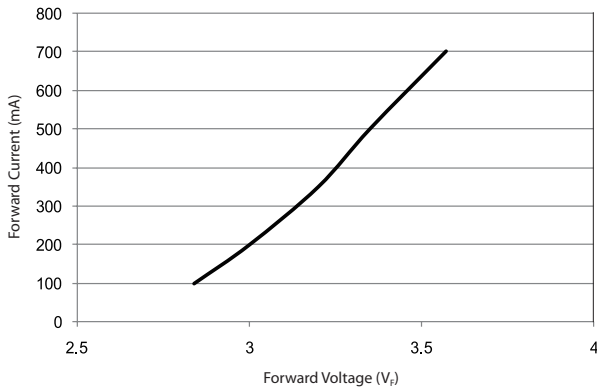
Cool White, Neutral White and Warm White color spectrum at $T_j = 25^\circ\text{C}$ for Edixeon A1 series

Radiation Diagram



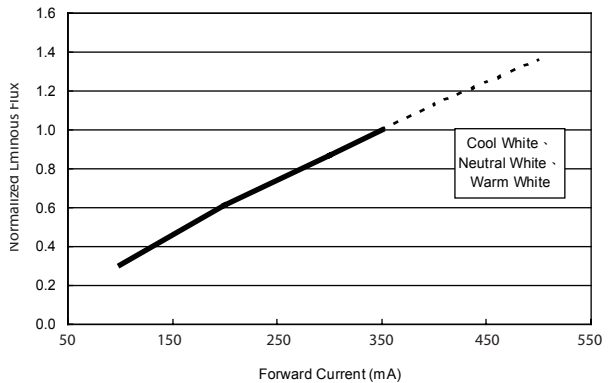
Lambertian at $T_j = 25^\circ\text{C}$ for Cool White, Neutral White, and Warm White

Forward Current vs. Forward Voltage



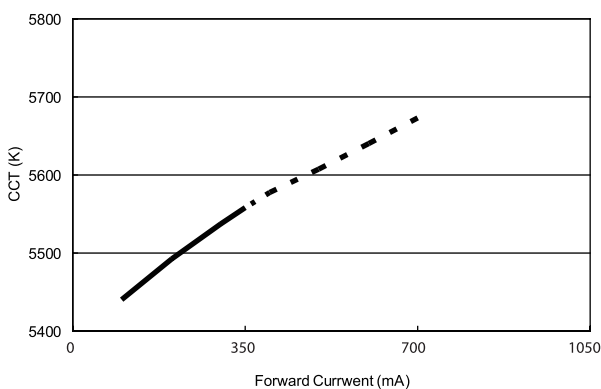
Forward current vs. forward voltage for 1W Edixeon A1 series

Luminous Flux vs. Forward Current

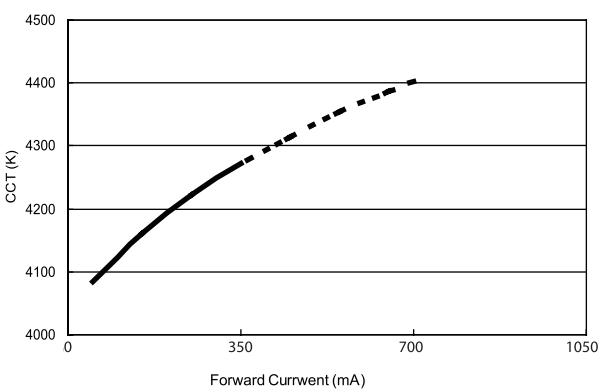


Forward current vs. luminous flux at $T_j = 25^\circ\text{C}$ for 1W Edixeon A1 series

CCT vs. Forward Current

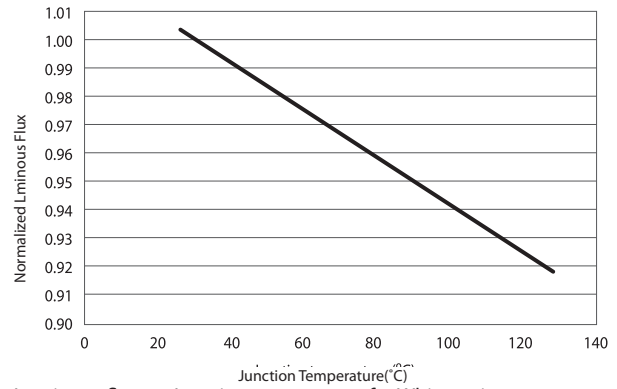
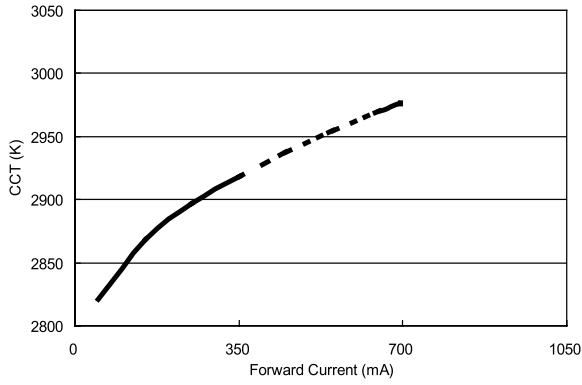


Forward current vs. CCT at $T_j = 25^\circ\text{C}$ for Edixeon A1 series Cool White



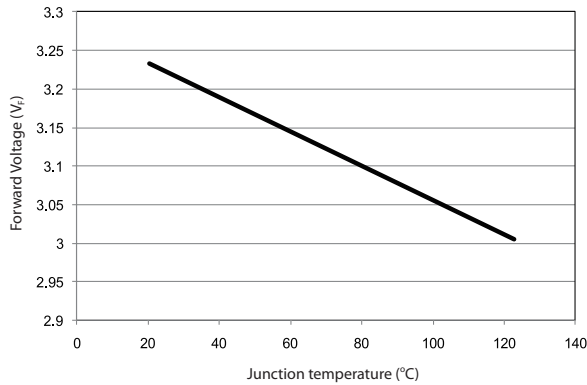
Forward current vs. CCT at $T_j = 25^\circ\text{C}$ for Edixeon A1 series Neutral White

Luminous Flux vs. Junction temperature

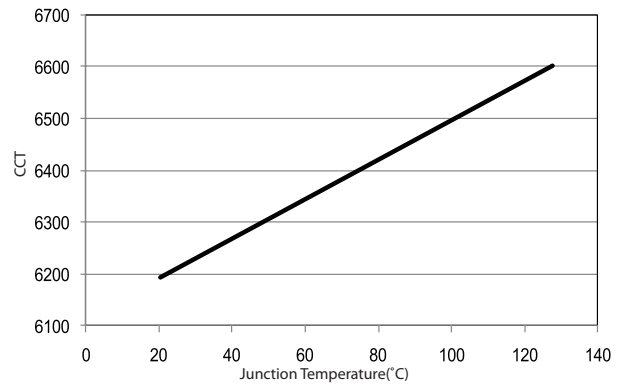


Forward current vs. CCT at $T_j=25^\circ\text{C}$ for Edixeon A1 series Warm White Luminous flux vs. Junction temperature for White series.

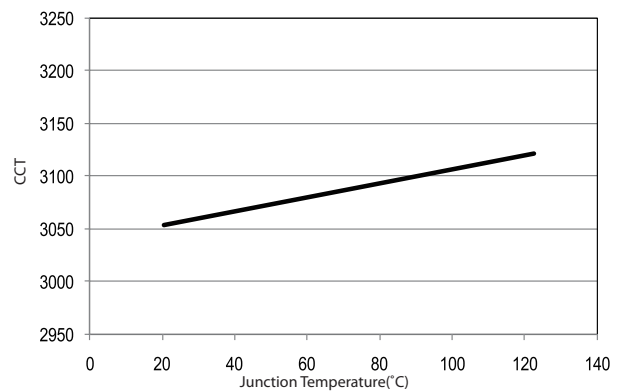
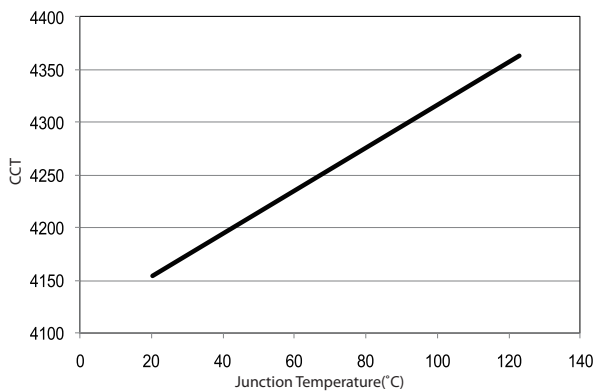
Forward Voltage vs. Junction temperature



CCT vs. Junction Temperature

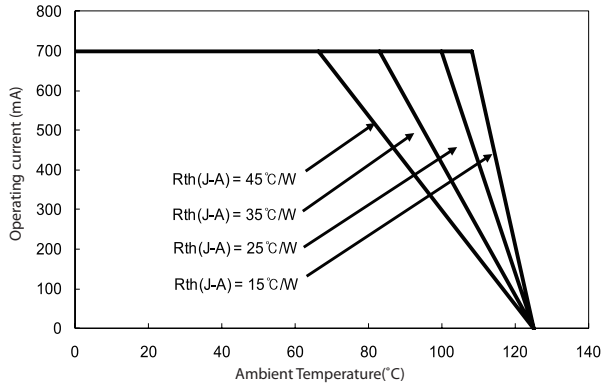


Forward voltage vs. Junction temperature for 1W Edixeon A1 series CCT vs. Junction temperature for 1W Edixeon A1 series Cool white



CCT vs. Junction temperature for 1W Edixeon A1 series Neutral CCT vs. Junction temperature for 1W Edixeon A1 series Warm white

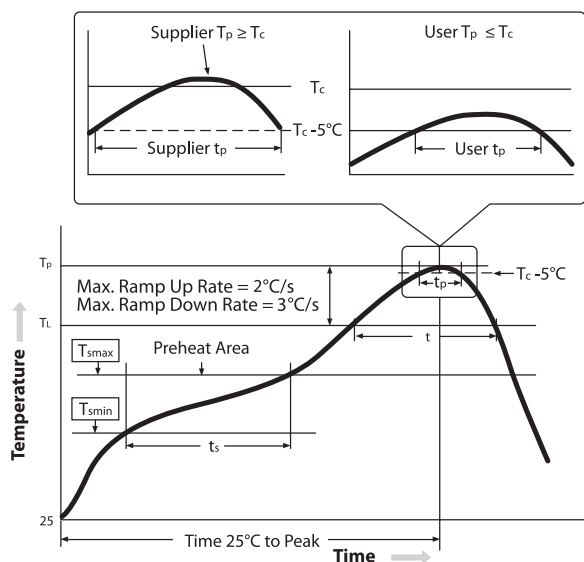
CCT vs. Junction Temperature



CCT vs. Junction temperature for 1W Edixeon A1 series Cool white

Reflow Profile

The following reflow profile is from IPC/JEDEC J-STD-020D which provided here for reference.



Classification Reflow Profiles

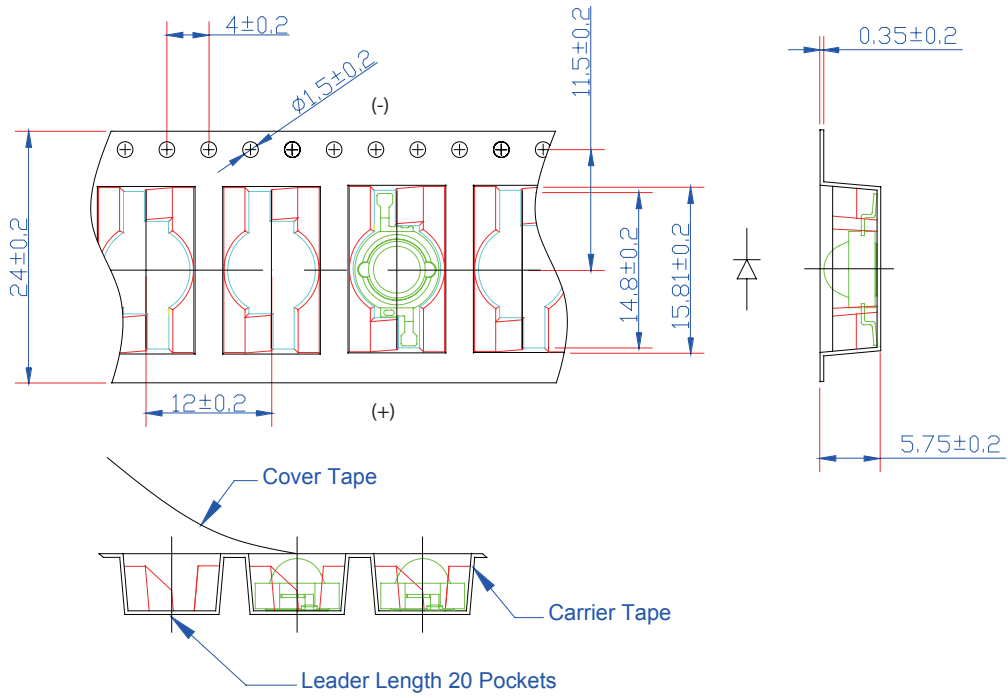
Profile Feature	Low-Temp,Pb-Free Assemble
Preheat/Soak	
Temperature Min (T _{smmin})	80°C
Temperature Max (T _{smmax})	110°C
Time (ts) from (T _{smmin} to T _{smmax})	60-120 seconds
Ramp-up rate (TL to T _p)	2°C/ seconds max.
Liquidous temperature (TL)	138°C
Time (tL) maintained above TL	20-50 seconds
Peak package body temperature (T _p) ⁽¹⁾	155°C~160°C
Classification temperature (T _c)	160°C
Time (tp) within 5°C of the specified classification temperature (T _c) ⁽²⁾	30 seconds
Average ramp-down rate (T _p to T _{smmax})	3°C/second max.
Time 25°C to peak temperature	6minutes max

Notes:

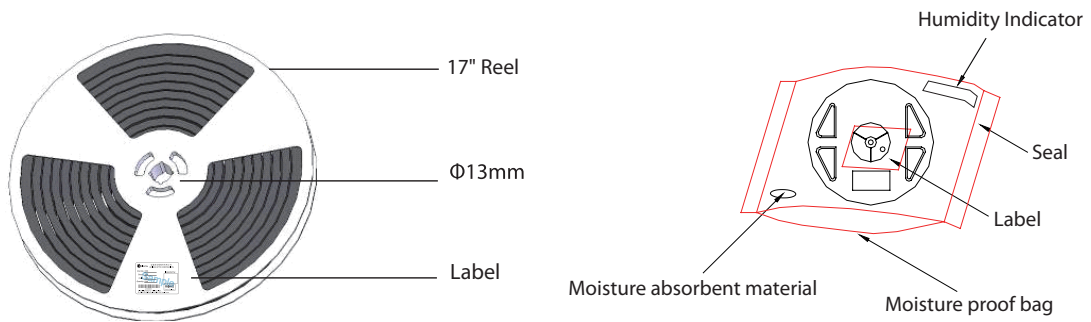
1. Tolerance for peak profile temperature (Tp) is defined as a supplier minimum and a user maximum.
2. Tolerance for time at peak profile temperature (tp) is defined as a supplier minimum and a user maximum.

Product Packaging Information

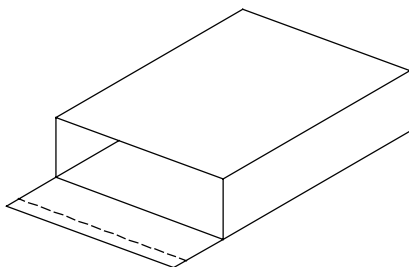
Tape and Reel Dimension



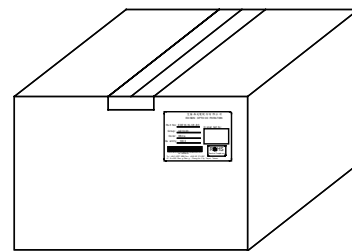
Edixeon Emitter



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	2013/09/06
2	1. Update the photo of front page 2. Add the Characteristic curve & Reflow profile	2013/09/10
3	1. Add Color bin code 2. Add Voltage Bin structure	2015/01/21
4	Revise Reflow profile	2015/06/12

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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