



Lighting Design Manufacturing Service

www.edison-opto.com

High Power LEDs

Edixeon® S6 Series Datasheet



Features :

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



Lighting Design Manufacturing Service

Table of Contents

General Information	3
Introduction	3
Product Nomenclature	3
Mechanical Dimensions	4
Emitter Dimensions	4
Star/Square Dimensions	5
Absolute Maximum Ratings	6
Luminous Flux Characteristic	7
Characteristics	8
Optical Characteristics	8
Electrical Characteristics	8
Characteristic Curve	9
Spectrum	9
Luminous Flux & Junction Temperature	9
Radiation Diagram	9
CCT & Junction Temperature	9
Forward Voltage & Forward Current	10
CCT & Forward Current	10
Luminous Flux & Forward Current	10
Product Packaging Information	11
Taping Reel	11
The Label	11
Packaging Steps	12
Packaging Dimensions	13
Revision History	14
About Edison Opto	14



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General Information

Introduction

Edixeon® S6 series emitters are one of the highest flux LEDs in the world by Edison Opto. Edixeon® S6 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. Edixeon® S6 Series emitters are designed by particular package for reflow process application. 1W Edixeon® S6 Series white has typical 120 lumens @350mA. Unlike most fluorescent sources, Edixeon® S6 Series contains no mercury and has more energy efficient than other incandescent light source.

Product Nomenclature

The following table describes the available color, power, and lens type. For more flux and forward voltage information, please consult the Bin Group document.

Table 1. Edixeon® S6 series nomenclature

ED		EW		1		LS		6		BR		AB		16	
X1		X2		X3		X4		X5		X6		X7		X8	
LED Item		Module		Emitting Color		Power		Lens Item							
Code	Type	Code	Type	Code	Type	Code	Type	Code	Type						
ED	Edixeon®	E	Emitter	W	Cool White	1	1W	L	Lambertan(140°)						
		S	Star	H	Neutral White	3	3W								
				X	Warm White										
X6~X9 Shape Item		X10 AI PCB Type		X11 AI PCB Color		X12 PCB Thickness									
Code	Type	Code	Type	Code	Type	Code	Type								
--	--	A	Star	B	Black	10	1.0mm								
		B	Square(25x25mm)			16	1.6mm								
		C	Square(30x30mm)			20	2.0mm								

Mechanical Dimensions

Emitter Dimensions

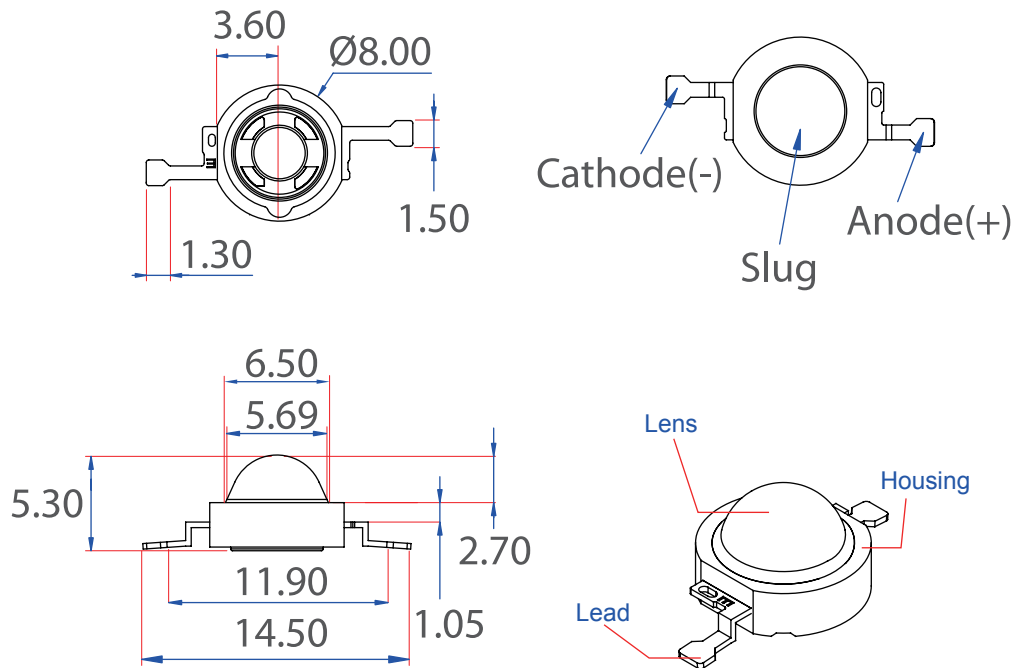


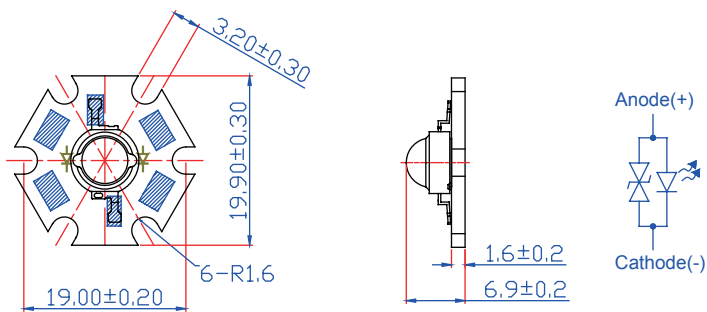
Figure 1. Edixeon® S6 series dimensions

Notes:

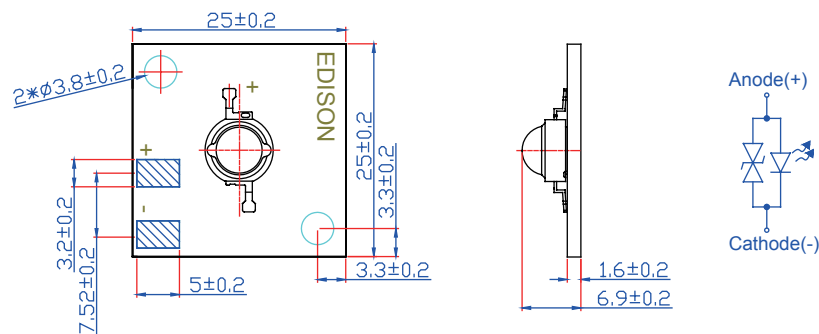
1. All dimensions are in mm.
2. Drawings are not to scale.
3. It is strongly recommended to apply an electrically isolated heat conducting film between the slug and contact surfaces.

Star/Square Dimensions

EDSx-1LSx-xx-Ax16



EDSx-1LSx-xx-Bx16



EDSx-1LSx-xx-Cx16

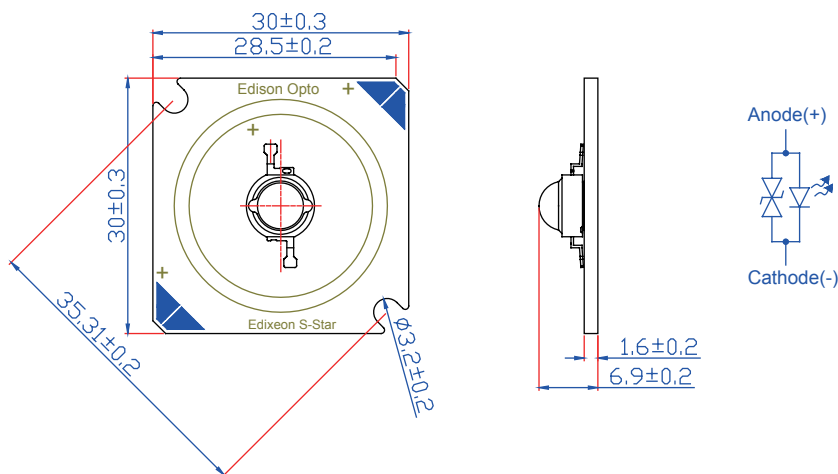


Figure 2. Edixeon® star dimensions

Note:

All dimensions are in mm.

Absolute Maximum Ratings

The following tables describe the characteristics of Edixeon® S6 Series under various current.

Table 2. Absolute maximum ratings for Edixeon® S6 series

Parameter	Rating(3W)	Rating(1W)	Unit	Symbol
DC Forward Current(1W)	700	350	mA	I_F
Peak pulse current; (tp°C100μs, Duty cycle=0.25)	1000	500	mA	
Reverse Voltage	5	5	V	V_R
Drive Voltage	5	5	V	V_D
LED junction Temperature	125	125	°C	T_J
Operating Temperature	-30 ~ +110	-30 ~ +110	°C	
Storage Temperature	-40 ~ +120	-40 ~ +120	°C	
Soldering Temperature	260	260	°C	
ESD Sensitivity	4,000	4,000	V	V_B
Manual Soldering Time at 360°C(Max.)	5	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. Allowable reflow cycles are 3 times for each LED.
4. tp: Pulse width time

Luminous Flux Characteristic

The following tables describe flux of Edixeon® S6 Series under various current and different color.

Table 3. Luminous flux characteristic at $I_f=350\text{mA}$ and $T_j=25^\circ\text{C}$

Power Item	Part Name	Color	Min Luminous Flux @350mA		Unit
			Group	Flux(lm)	
1W	EDEW-1LS6-FR	Cool White	U3	100	lm
			V1	112.5	lm
	EDEW-1LS6-BR		U2	90	lm
			U3	100	lm
	EDEH-1LS6-ER	Neutral White	U1	86.5	lm
			U2	90	lm
	EDEX-1LS6-FR	Warm White	T2	70	lm
			T3	80	lm
	EDEX-1LS6-ER		T1	66.5	lm
			T2	70	lm
	EDEW-3LS6-FR	Cool White	W2	168.1	lm
			X	190	lm
3W	EDEW-3LS6-BR		W1	146.2	lm
			W2	168.1	lm
	EDEH-3LS6-ER		V2	129.4	lm
			W1	146.2	lm
	EDEX-3LS6-FR		V1	112.5	lm
			V2	129.4	lm
	EDEX-3LS6-ER		U3	100	lm
			V1	112.5	lm

Note:

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

Characteristics

Optical Characteristics

Table 4. Optical Characteristics at $T_j = 25^\circ\text{C}$

Power Item	Part Name	Color	CCT (K)		CRI	Viewing Angle (Degree)
			Min.	Max.		
1W	EDEW-1LS6-FR	Cool White	5,000	10,000	65	130
	EDEW-1LS6-BR		5,000	10,000	70	130
	EDEH-1LS6-ER	Neutral White	3,800	5,000	75	130
	EDEX-1LS6-FR	Warm White	2,670	3,800	75	130
	EDEX-1LS6-ER		2,670	3,800	80	130
	EDEW-3LS6-FR	Cool White	5,000	10,000	65	130
3W	EDEW-3LS6-BR		5,000	10,000	70	130
	EDEH-3LS6-ER	Neutral White	3,800	5,000	75	130
	EDEX-3LS6-FR	Warm White	2,670	3,800	75	130
	EDEX-3LS6-ER		2,670	3,800	80	130

Note:

CRI is measured with an accuracy of ± 5

Electrical Characteristics

Table 5. Electrical characteristics at $I_f = 350\text{mA}$, 700mA and $T_j = 25^\circ\text{C}$

Power Item	Part Name	Color	$V_f(\text{V})$			Forward Current (mA)	Thermal Resistance ($^\circ\text{C}/\text{W}$)
			Min.	Typ.	Max.		
1W	EDEW-1LS6-xR	Cool White	2.8	3.2	3.7	350	10
	EDEH-1LS6-xR	Neutral White	2.8	3.2	3.7	350	10
	EDEX-1LS6-xR	Warm White	2.8	3.2	3.7	350	10
3W	EDEW-3LS6-xR	Cool White	3.2	3.6	4	700	10
	EDEH-3LS6-xR	Neutral White	3.2	3.6	4	700	10
	EDEX-3LS6-xR	Warm White	3.2	3.6	4	700	10

Note:

Forward voltage is measured with an accuracy of $\pm 0.1\text{V}$

Characteristic Curve

Spectrum

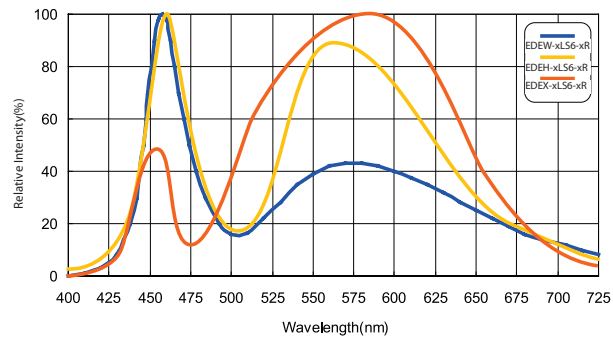


Figure 3. Cool white, neutral white and warm white color spectrum at $T_j = 25^\circ\text{C}$

Radiation Diagram

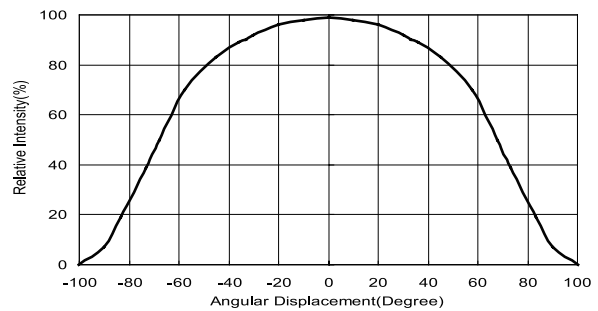


Figure 4. Emission angle

Luminous Flux & Junction Temperature

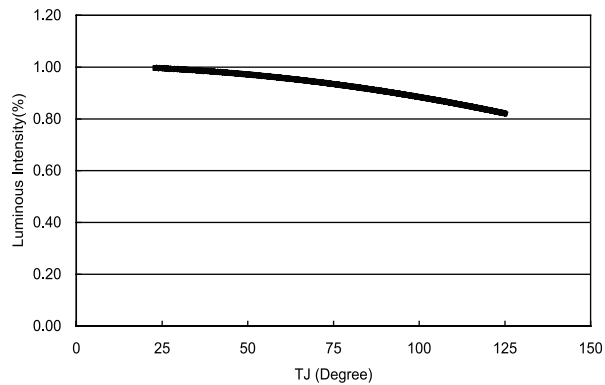


Figure 5. Junction temperature & lumens intensity for Cool White, Neutral White, Warm White

CCT & Junction Temperature

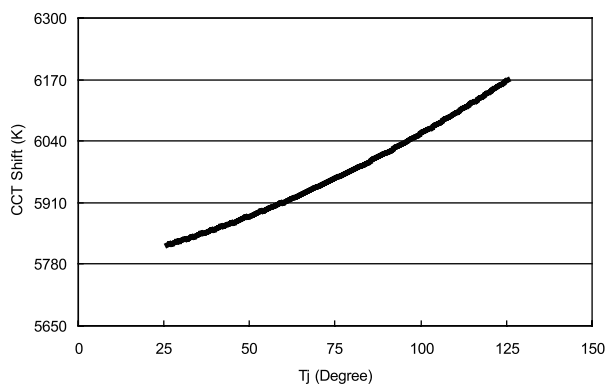


Figure 6. Junction temperature & CCT Shift for Cool White

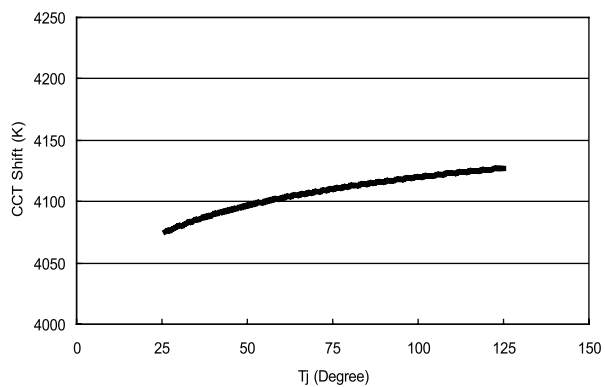


Figure 7. Junction temperature & CCT Shift for Neutral White

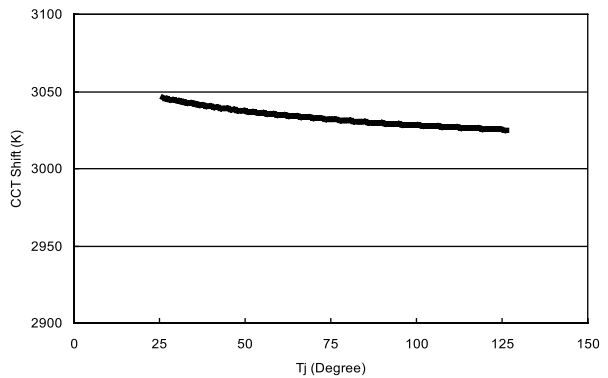


Figure 8. Junction temperature & CCT Shift for Warm White

Forward Voltage & Forward Current

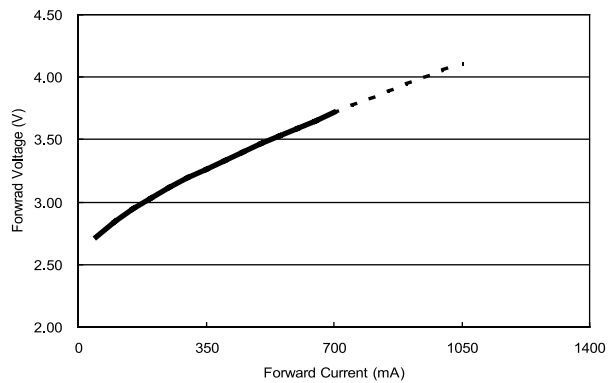


Figure 9. Forward Current & Forward Voltage at Tj=25°C

Luminous Flux & Forward Current

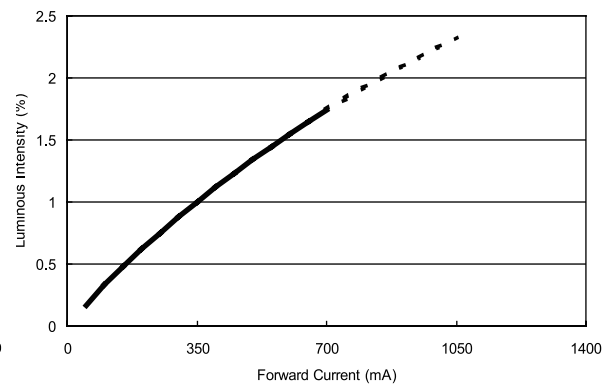


Figure 10. Forward Current & Luminous Intensity at Tj=25°C

CCT & Forward Current

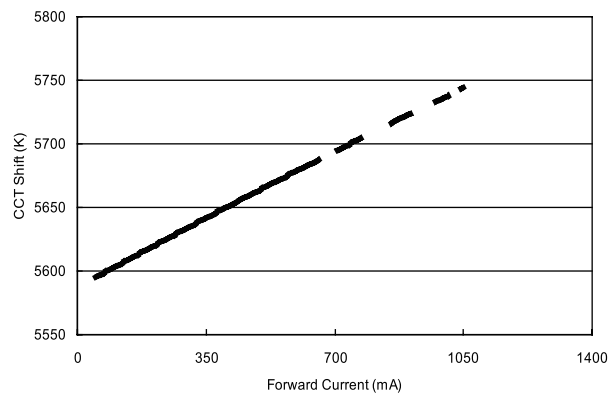


Figure 11. Forward Current & CCT at Tj=25°C for Cool White

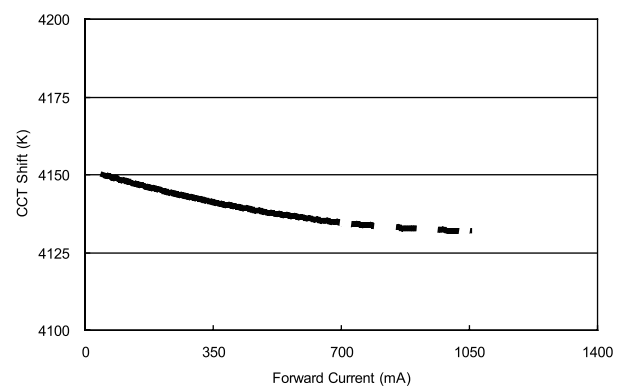


Figure 12. Forward Current & CCT at Tj=25°C for Neutral White

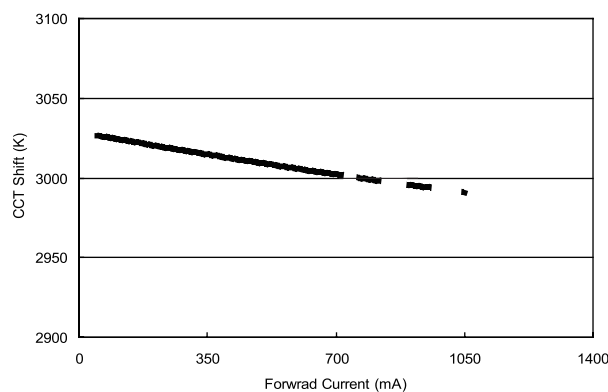
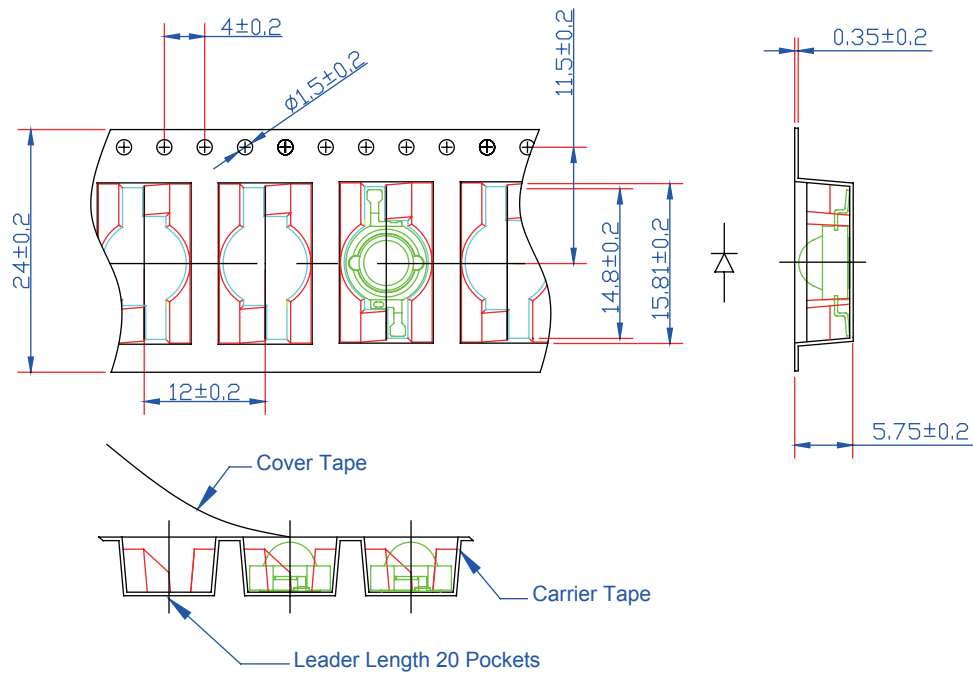


Figure 13. Forward Current & CCT at Tj=25°C for Warm White

Product Packaging Information

Taping Reel



The Label

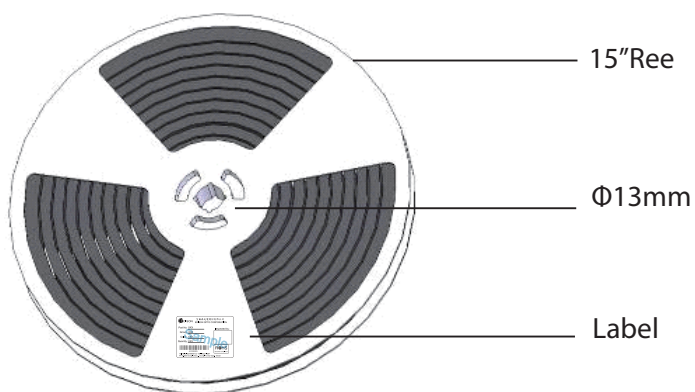


Figure 14. Taping reel dimensions

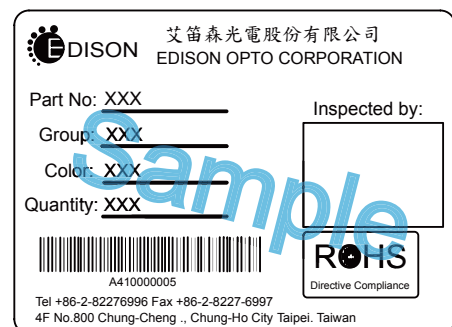
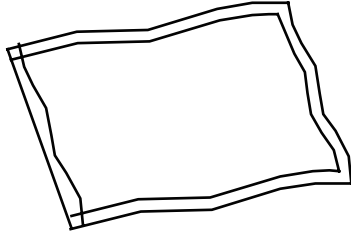
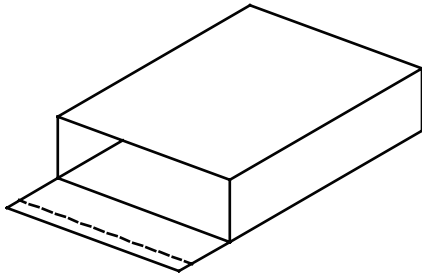


Figure 15. Label on taping reel

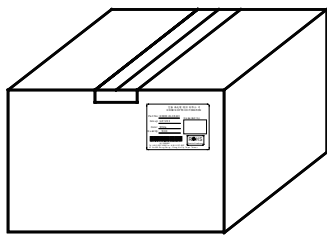
Packaging Steps



1 reel in a bag.



2 bags in a box.



2 inner boxes in a carton.

Figure 16. Packaging steps

Notes:

1. All dimensions are in mm.
2. There are 1000pcs emitters in a full reel.
3. There is one reel in a bag.
4. There are 2 bags in a box.
5. There are 2 inner boxes in a carton.
6. A bag contains one humidity indicator card and drying agent.

Packaging Dimensions

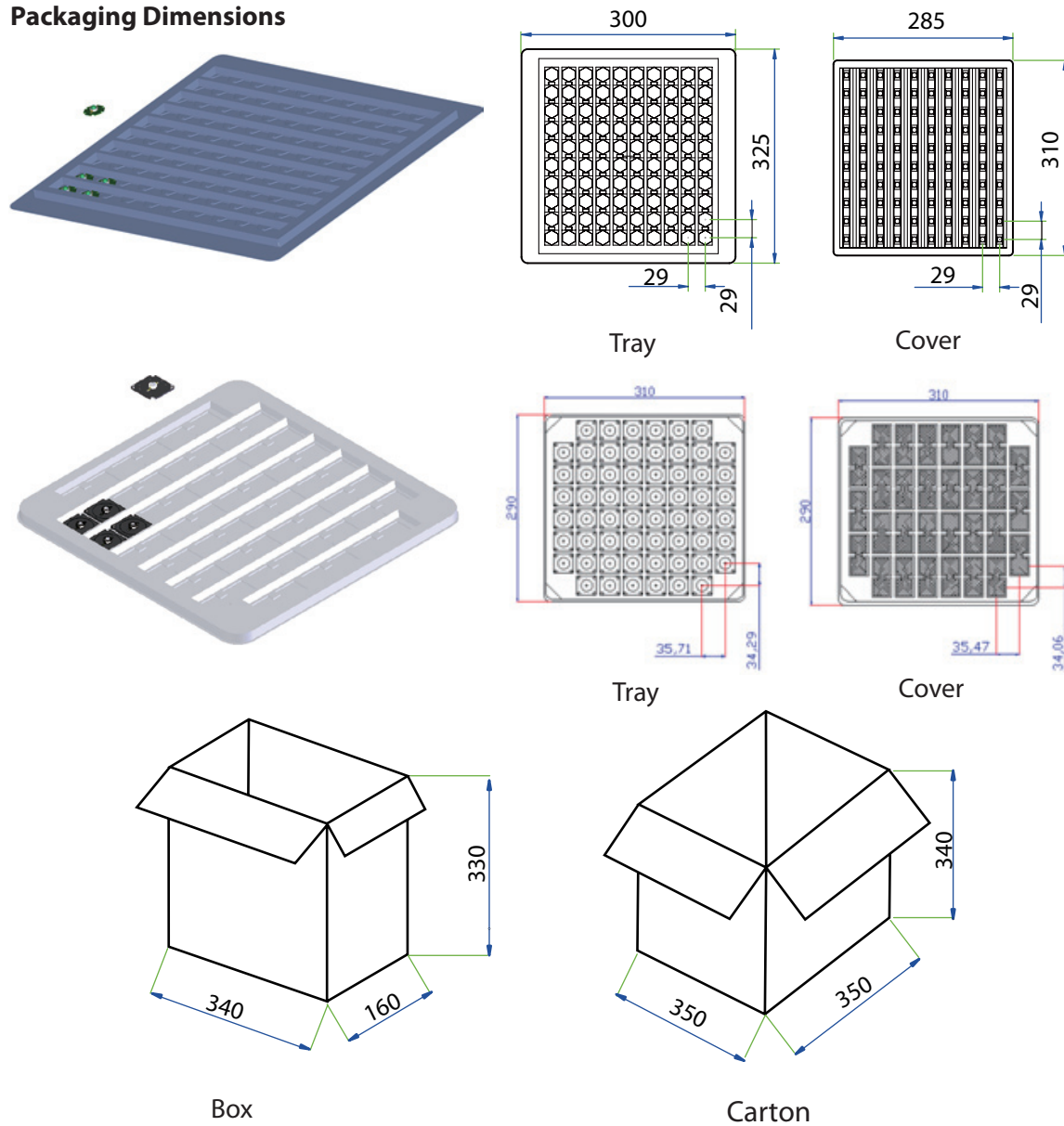


Figure 17. Edixeon® Star package and dimensions

Notes:

1. All Dimensions are in mm.
2. There are 100 pcs stars in a tray.(Tray+Cover)
3. There are 10 trays in a box.
4. There are 2 inner boxes in a carton.

Revision History

Table 6. Revision history of Edixeon® 6 series datasheet

Version	Description	Release Date
4	1. Update the layout of datasheet 2. Update dimensions of emitter 3. Update the flux with bin group	2011.08.01

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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