Lighting Design Manufacturing Service

www.edison-opto.com

High Power LEDs

Edixeon® S5 Series Datasheet

Features :

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

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General Information

Introduction

Edixeon® S5 series emitters are one of the highest flux LEDs in the world by Edison Opto. Edixeon® S5 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® S5 Series emitters are designed by particular package for reflow process application. 1W Edixeon® S5 Series white has typical 105 lumens @350mA.
Unlike most fluorescent sources, Edixeon® S5 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® S5 series nomenclature

ED	E	W	-	1	L	S	5	-	B	R	-	A	B	16
X1	X2	X3		X4	X5	X6	X7		X8	X9		X10	X11	X12

X1 LED Item		X2 Module		X3 Emitting Color		X4 Power		X5 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 Al PCB Type		X11 Al 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

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Mechanical Dimensions

Emitter Dimensions

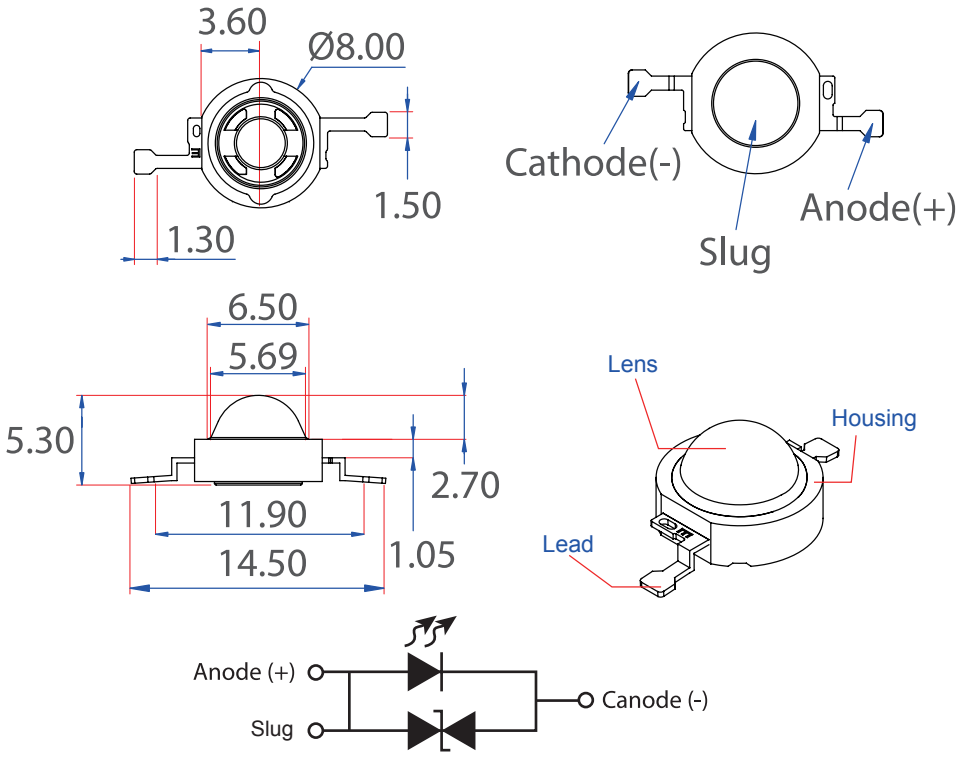

Figure 1. Edixeon® S5 series dimensions

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

Star Dimensions

EDSx-1LSx-xx-Ax16

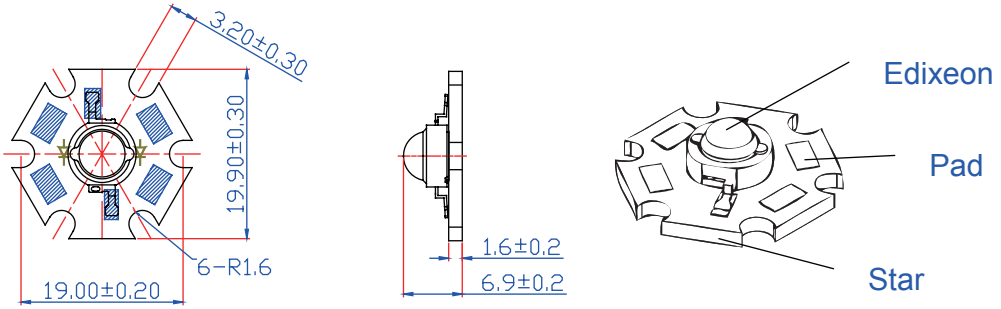

Figure 2. Edixeon® star dimensions

Note:
All dimensions are in mm.

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Absolute Maximum Ratings

The following tables describe the characteristics of Edixeon® S5 Series under various current.

Table 2. Absolute maximum ratings for Edixeon® S5 series

Parameter	Rating(3W)	Rating(1W)	Unit	Symbol
DC Forward Current(1W)	700	350	mA	I_F
Peak pulse current; (tp<=100μs, 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

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Luminous Flux Characteristic

The following tables describe flux of Edixeon® S5 Series under various current and different color.

Table 3. Luminous flux characteristic at I_F=350mA, I_F=700mA and T_J=25°C

Power Item	Part Name	Color	Min Luminous Flux @350mA		Unit
			Group	Flux(lm)	
1W	EDEW-1LS5-FR	Cool White	U3	100	lm
			V1	112.5	lm
	EDEW-1LS5-BR	Cool White	U2	90	lm
			U3	100	lm
	EDEH-1LS5-ER	Neutral White	U1	86.5	lm
			U2	90	lm
	EDEX-1LS5-FR	Warm White	T2	70	lm
			T3	80	lm
	EDEX-1LS5-ER	Warm White	S2	58.8	lm
			T1	66.5	lm
			T2	70	lm
3W	EDEW-3LS5-FR	Cool White	W2	168.1	lm
			X	190	lm
	EDEW-3LS5-BR	Cool White	W1	146.2	lm
			W2	168.1	lm
	EDEH-3LS5-ER	Neutral White	V1	112.5	lm
			V2	129.4	lm
			W1	146.2	lm
	EDEX-3LS5-FR	Warm White	U3	100	lm
			V1	112.5	lm
			V2	129.4	lm
			W1	146.2	lm
	EDEX-3LS5-ER	Warm White	U3	100	lm
			V1	112.5	lm

Note:
Flux is measured with an accuracy of ± 10%

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Characteristics

Optical Characteristics

Table 4. Optical characteristics at I_F=350mA, I_F=700mA and T_J=25°C

Power Item	Part Name	Color	V_F(V)			CRI	Viewing Angle (Degree)
			Min.	Typ.	Max.		
1W	EDEW-1LS5-xR	Cool White	3.1	3.4	4	68	130
	EDEH-1LS5-xR	Neutral White	3.1	3.4	4	75	130
	EDEX-1LS5-xR	Warm White	3.1	3.4	4	80	130
3W	EDEW-3LS5-xR	Cool White	3.4	3.7	4	68	130
	EDEH-3LS5-xR	Neutral White	3.4	3.7	4	70	130
	EDEX-3LS5-xR	Warm White	3.4	3.7	4	80	130

Notes:
1. Forward voltage is measured with an accuracy of ± 0.1V
2. CRI is measured with an accuracy of ± 5
3. Emission angle is measured with an accuracy of ±10 degree

Electrical Characteristics

Table 5. Electrical Characteristics at T_J=25°C

Lens Item	Part Name	Color	CCT (K)		Thermal Resistance (°C/W)
			Min.	Max.	
Lambertian	EDEW-xLS5-xR	Cool White	5,000	10,000	10
	EDEH-xLS5-xR	Neutral White	3,800	5,000	10
	EDEX-xLS5-xR	Warm White	2,670	3,800	10

Note:
CCT is measured with an accuracy of ±5%

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Characteristic Curve

Spectrum

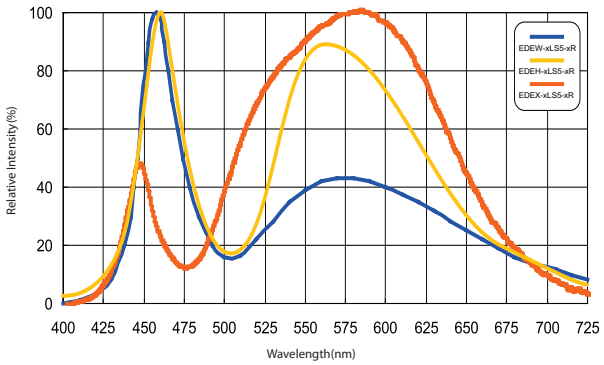

Figure 3. Cool white, Neutral white and Warm white color spectrum at T_J =25˚C

Radiation Diagram

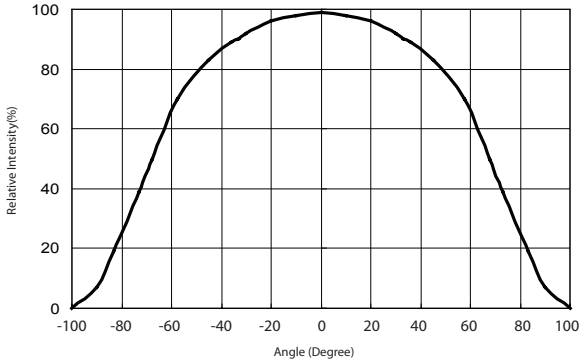

Figure 4. Emission angle

Luminous Flux & Forward Current

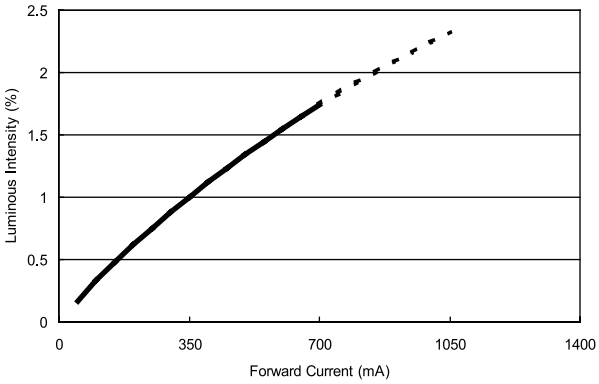

Figure 5. Forward Current & Luminous Intensity at T_J=25˚C

Forward Voltage & Forward Current

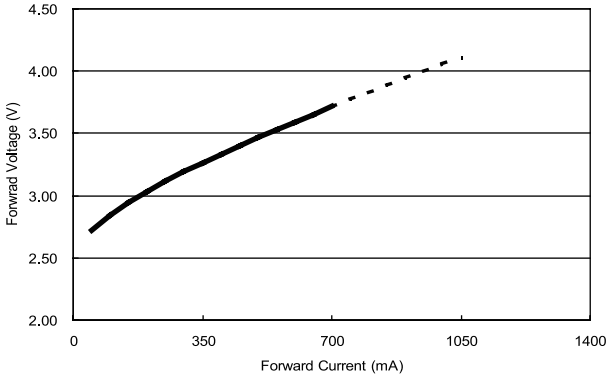

Figure 6. Forward Current & Forward Voltage at T_J=25˚C

CCT & Forward Current

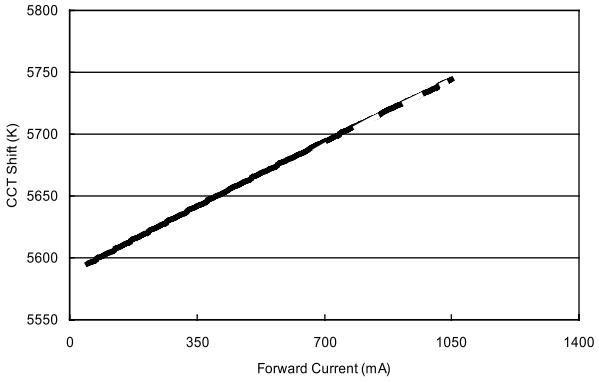

Figure 7. Forward Current & CCT at T_J=25˚C for Cool White

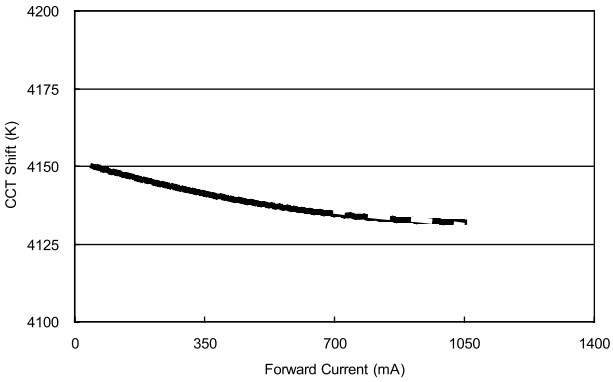

Figure 8. Forward Current & CCT at T_J=25˚C for Neutral White

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Luminous Flux & Junction Temperature

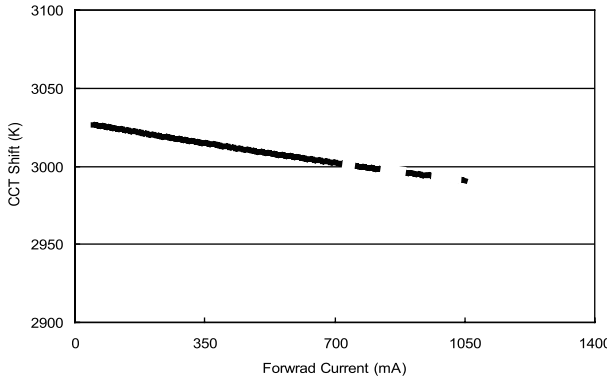

Figure 9. Forward Current & CCT at T_J=25˚C for Warm White

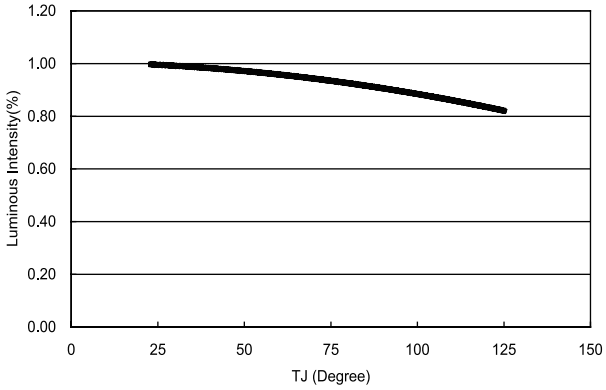

Figure 10. Junction temperature & lumens intensity for Cool White, Neutral White, Warm White

CCT & Junction Temperature

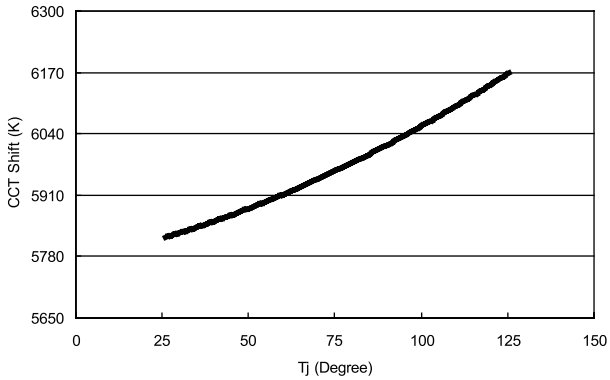

Figure 11. Junction temperature & CCT Shift for Cool White

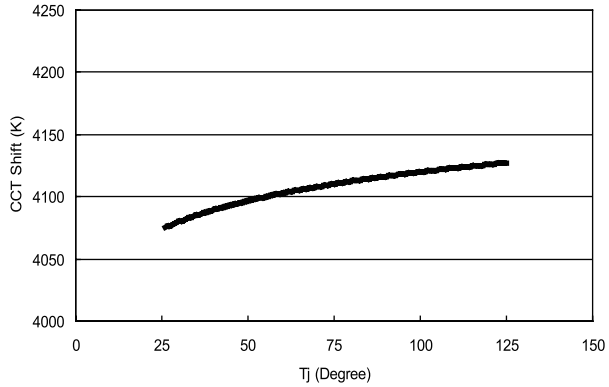

Figure 12. Junction temperature & CCT Shift for Neutral White

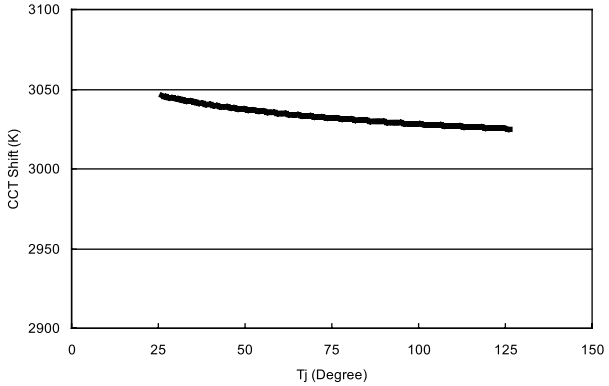

Figure 13. Junction temperature & CCT Shift for Warm White

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Revision History

Table 6. Revision history of Edixeon® 5 series datasheet

Version	Description	Release Date
4	1. Update the layout of datasheet 2. Update the flux with bin group	2011.08.11
5	1. Revise the part number	2011.09.23

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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