



Lighting Design Manufacturing Service

www.edison-opto.com

EdiPower® II Series

EdiPower® II LD Series Datasheet



Features :

- LED light engine
- High power operation
- Instant on
- Long lifetime



Lighting Design Manufacturing Service

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General Information

Introduction

EdiPower® II LD series can provide different operating powers and different colors. They serve as optical engine and can be utilized in general lighting and special lighting applications, such as MR16 and projectors. Furthermore, the high CRI options allow the customers to optimize the effect in various fields such as interior architecture.

Product Nomenclature

The following table describes the available colors, powers, and lens types. For more information on luminous flux and forward voltage, please refer to the Multi-chip Bin Group document.

Table 1 . EdiPower® II LD Series Nomenclature

<u>EP</u> X1		<u>S</u> X2	<u>X</u> X3	-	<u>N</u> X4	<u>F</u> X5	<u>3</u> X6	<u>3</u> X7		
X1 LED Item		X2 Emitter Type		X3 Emitting Color		X4 Serial No. (1)		X5 Serial No. (2)		
Code	Type	Code	Type	Code	Type	Code	Type	Code	Type	
EP	EdiPower®	S	Square	W	Cool White	N	Low cost	-	-	
				H	Neutral White					
				X	Warm White					
X6 Circute Series		X7 Circuit Parallel								
Code	Type	Code	Type							
1-9	1-9 Series	1-9	1-9 Parallel							

Mechanical Dimensions

6-10W Emitter Dimensions

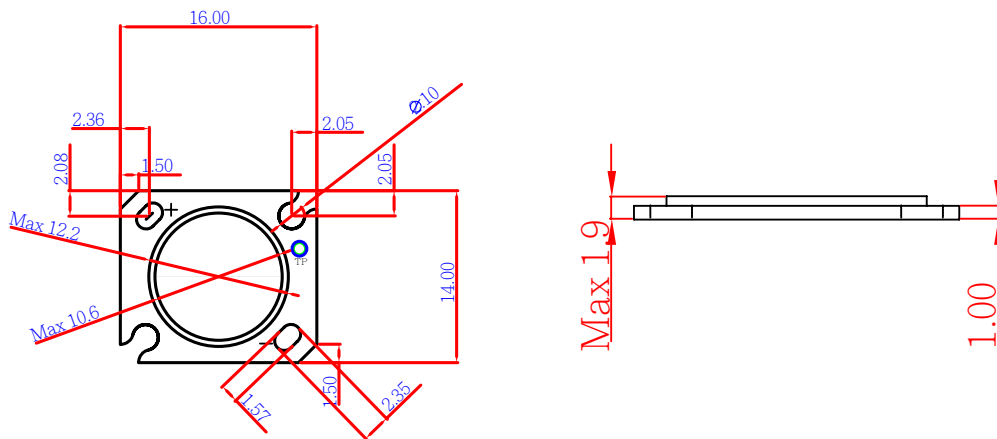


Figure 1. 6-10W EdiPower II LD Series Dimensions

Notes:

1. Unit : mm
2. Tolerance : ± 0.2 mm
3. Drawings are not to scale
4. TP : Thermal measurement point

10-24W Emitter Dimensions

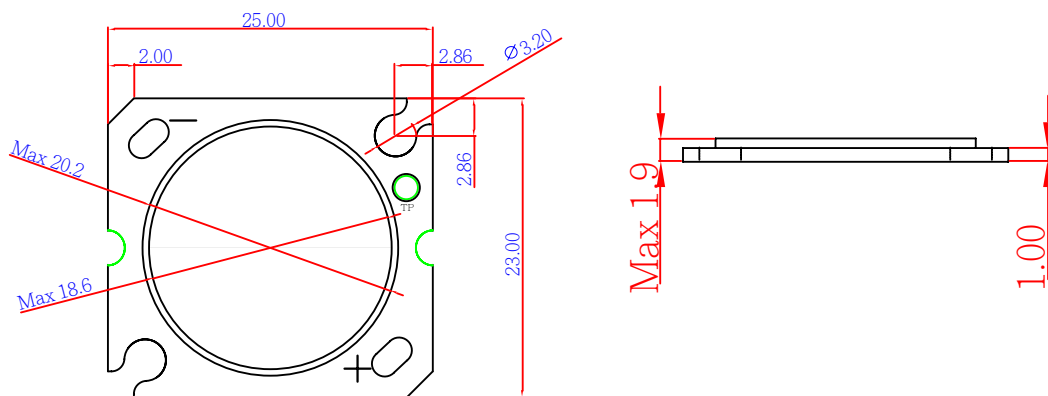


Figure 2. 10-15W/16~24W EdiPower II LD Series Dimensions

Notes:

1. Unit : mm
2. Tolerance : ± 0.2 mm
3. Drawings are not to scale
4. TP : Thermal measurement point

6-10W Emitter Circuit Layout

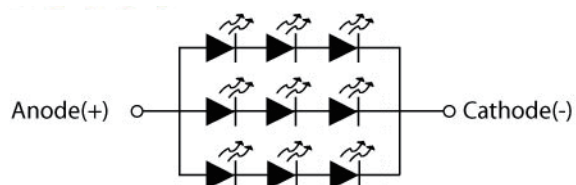


Figure 3. 6-10W EdiPower II LD series Circuit Layout

10-15W Emitter Circuit Layout

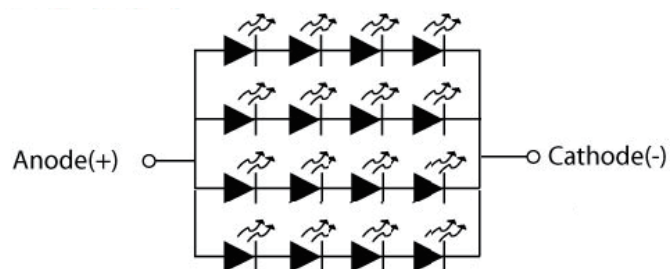


Figure 4. 10-15W EdiPower II LD series Circuit Layout

16-24W Emitter Circuit Layout

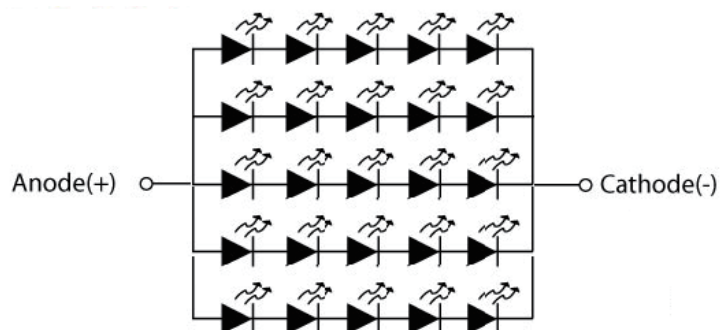


Figure 5. 16~24W EdiPower II LD series Circuit Layout

Absolute Maximum Ratings

The following table describes absolute maximum ratings of EdiPower® II LD series.

Table 2 . EdiPower® II LD series absolute maximum ratings

Test	EPSx-NF33	EPSx-NF44	EPSx-NF55	Unit	Symbol
DC Forward Current ¹	700~1000	700~1200	1,000~1500	mA	I _F
Max Forward Current	1200	1800	2000	mA	I _F
Peak pulse current (tp≤100μs,Duty cycle=0.25)	1500	2000	2500	mA	I _{Pulse}
Reverse Voltage ²	Note 2			V	V _R
LED junction Temperature ³	150			°C	T _J
Operating Temperature	-40 ~ +110			°C	
Storage Temperature	-40 ~ +120			°C	
Thermal Measurement Point (T _p)	<80			°C	T _s
ESD Sensitivity	2000			V	V _B
Isolation Voltage	1000			V	

Notes:

1. DC forward current should not exceed LED's operating current; the current tolerance should be kept within a range of 5%.
2. LEDs are not designed to be driven in reverse bias.
3. Proper current derating must be observed to maintain junction temperature below the maximum at all time.

Luminous Flux Characteristics

The following tables describe flux of EdiPower® II LD series under various current and different color.

Table 3 . Luminous flux characteristics at $T_j=25^{\circ}\text{C}$ for EdiPower® II LD series at cool white and neutral white

Color	Part Name	Typical Luminous Flux(lm) $T_p=60^{\circ}\text{C}$	Typical Luminous Flux(lm) $T_j=25^{\circ}\text{C}$	Typical Forward Voltage V_F (V)	Forward Current (mA)
Cool White	EPSW-NF33	520	570	9.3	700
		745	810	9.6	1000
	EPSW-NF44	720	785	12.0	700
		1030	1120	12.5	1000
		1120	1220	12.8	1200
	EPSW-NF55	1220	1330	15.5	1000
		1650	1790	16.0	1200
		1790	1950	16.5	1500
Neutral White	EPSH-NF33	465	510	9.3	700
		660	720	9.6	1000
	EPSH-NF44	640	700	12.0	700
		880	960	12.5	1000
		960	1040	12.8	1200
	EPSH-NF55	1090	1190	15.5	1000
		1320	1435	16.0	1200
		1560	1700	16.5	1500

Notes:

1. EPSx-NF33:Forward Voltage has $\pm 0.9\text{V}$ tolerance.
2. EPSx-NF44:Forward Voltage has $\pm 1.2\text{V}$ tolerance.
3. EPSx-NF55:Forward Voltage has $\pm 1.5\text{V}$ tolerance.

Color	Part Name	Typical Luminous Flux(lm) $T_p=60^{\circ}\text{C}$	Typical Luminous Flux(lm) $T_j=25^{\circ}\text{C}$	Typical Forward Voltage V_F (V)	Forward Current (mA)
Warm White	EPSX-NF33	400	440	9.3	700
		580	630	9.6	1000
	EPSX-NF44	620	670	12.0	700
		850	920	12.5	1000
		920	1000	12.8	1200
	EPSX-NF55	945	1300	15.5	1000
		1350	1470	16.0	1200
		1470	1600	16.5	1500

Notes:

1. EPSX-NF33:Forward Voltage has $\pm 0.9\text{V}$ tolerance.
2. EPSX-NF44:Forward Voltage has $\pm 1.2\text{V}$ tolerance.
3. EPSX-NF55:Forward Voltage has $\pm 1.5\text{V}$ tolerance.

Characteristics

Optical Characteristics

Table 4. Dominant Wavelength or Color Temperature Characteristics at $T_j=25^{\circ}\text{C}$ for EdiPower II LD series

Part Name	Color	λ_d/CCT		Unit
		Min.	Max.	
EPSW-NFxx	Cool White	5,000	10,000	K
EPSH-NFxx	Neutral White	3,800	5,000	K
EPSX-NFxx	Warm White	2,670	3,800	K

Notes:

1. CCT is measured with an accuracy of $\pm 5\%$
2. Wavelength is measured with an accuracy of $\pm 0.5\text{nm}$.

Thermal Resistance Characteristics

Table 5. Temperature Coefficient of Forward Voltage & Thermal Resistance Junction to Case Characteristics at $T_j=25^{\circ}\text{C}$ for EdiPower II LD series

Part Name	Test Current (mA)	$\Delta V_F / \Delta T$		$R\theta_{J-B}$	
		Typ.	Unit	Typ.	Unit
EPSx-NF33	1000	-2 to -8	mV/ $^{\circ}\text{C}$	1.4	$^{\circ}\text{C}/\text{W}$
EPSx-NF44	1200	-5 to -10	mV/ $^{\circ}\text{C}$	0.9	$^{\circ}\text{C}/\text{W}$
EPSx-NF55	1500	-5 to -12	mV/ $^{\circ}\text{C}$	0.6	$^{\circ}\text{C}/\text{W}$

Characteristic Curve

Spectrum

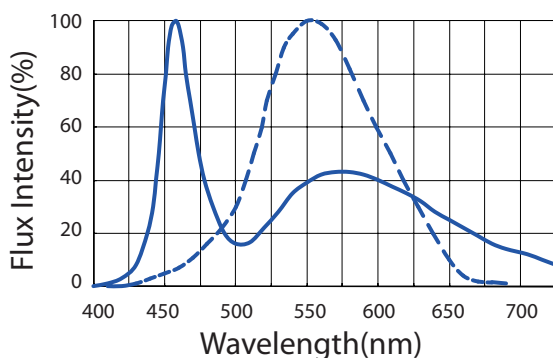


Figure 6. Color spectrum for EdiPower II LD series cool white

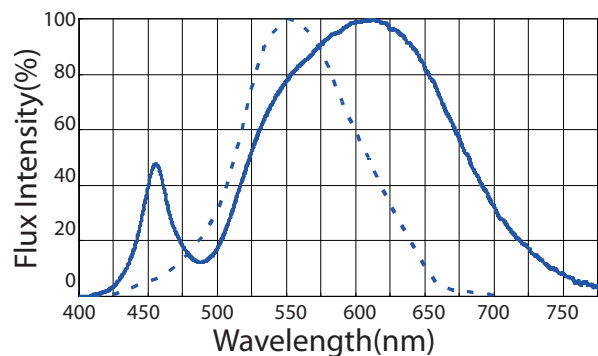


Figure 7. Color spectrum for EdiPower II LD series warm white and neutral white

Radiation Diagram

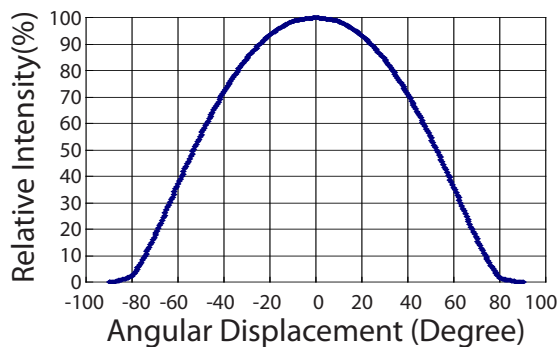


Figure 8. Lambertian at $T_j=25^{\circ}\text{C}$ for EdiPower II LD series

Luminous Flux & Junction Temperature

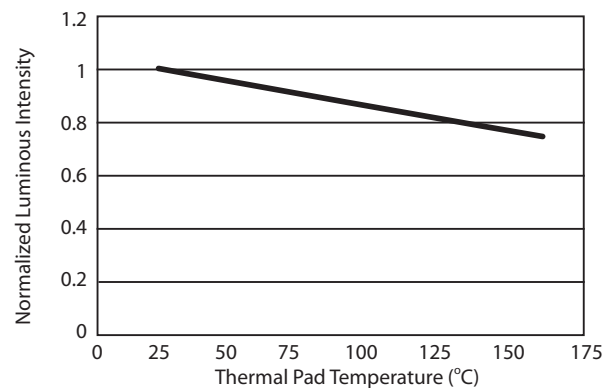


Figure 9. Relative luminous flux vs. thermal pad temperature for Cool White

CCT & Junction Temperature

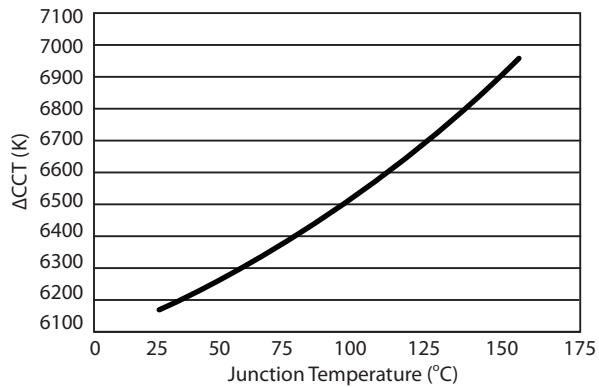


Figure 10. Typical CCT vs. junction temperature for Cool White

CCT & Forward Current

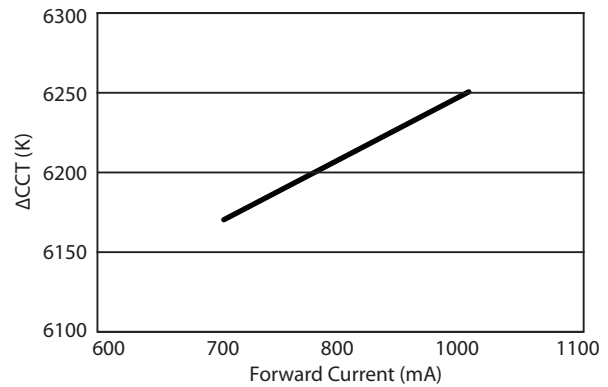


Figure 11. CCT shift for EPSW-NF33

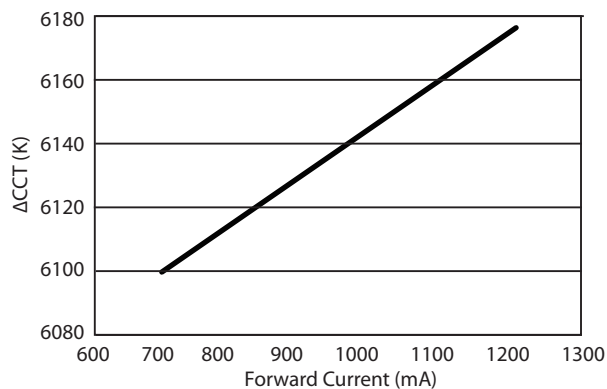


Figure 12. CCT shift for EPSW-NF44

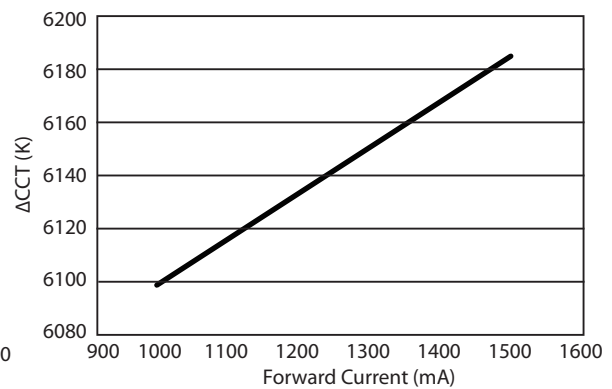


Figure 13. CCT shift for EPSW-NF55

Power Output

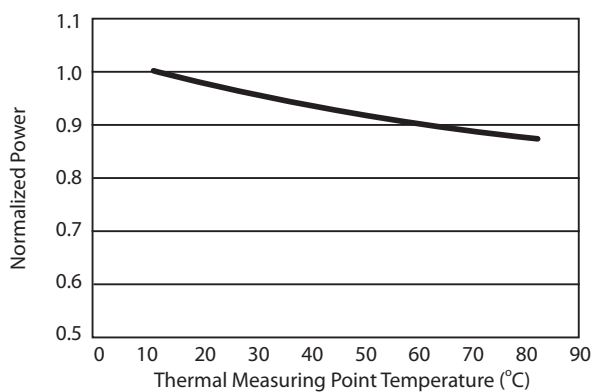
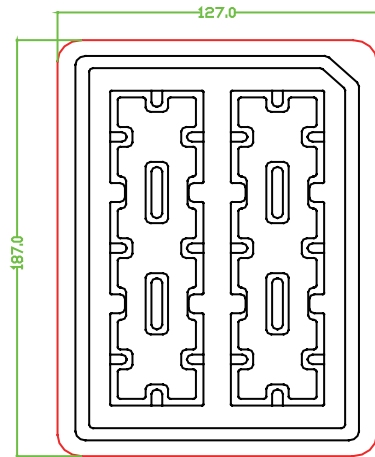


Figure 14. Power output for EdiPower II LD Series

Product Packaging Information

Tray Packing for 4/6W and 10/15W



Tray Packing for 20/25W

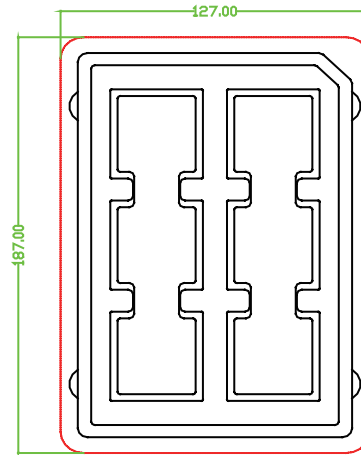


Figure 15. Tray package dimension.

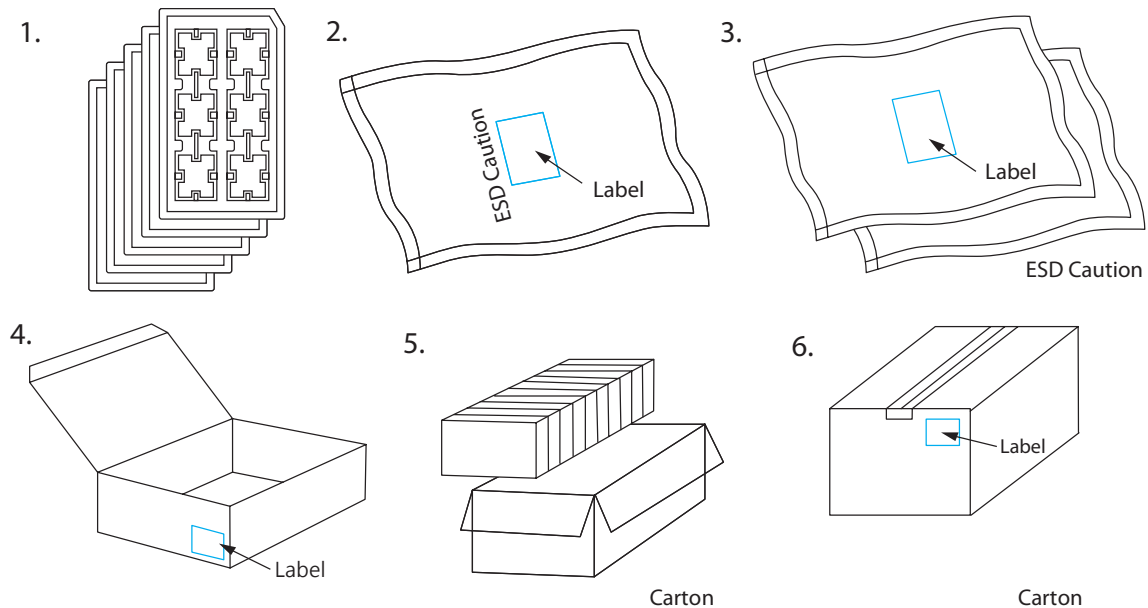


Figure 16. Packaging steps.

Notes:

1. All dimensions are in mm.
2. There are 4/6W and 10/15 24pcs or 20/25 6pcs emitters in a full tray.
3. There are 5 trays in a bag.
4. There are 2 bags in a box.
5. There are 10 inner boxes in a carton.
6. A bag contains one humidity indicator card and drying agent.

Revision History

Table 6. Revision history of EdiPower II® LDseries datasheet

Version	Description	Release Date
3	1. Update the layout of datasheet 2. Update the bin group	2011/07/21
4	1. Update Dimensions on p.4 2. Add packaging information on p.11	2012/01/11

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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