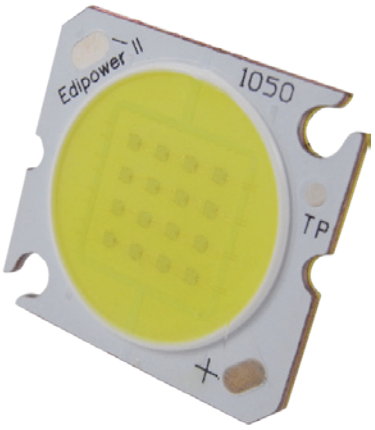
EdiPower® II Series

EdiPower® II Series Datasheet



Typical applications :

- Stage Lighting
- Street Lighting
- Decorative Lighting
- Architectural Lighting
- Downlights

Features :

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

Lighting Design Manufacturing Service

Table of Contents

General Information

Introduction

EdiPower II 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 flux and forward voltage information, please consult the Bin Group document.

Table 1. EdiPower® II Series Nomenclature

EP	S	x	-	V	F	2	3
X1	X2	X3		X4	X5	X6	X7

X1 LED Item		X2 Module		X3 Emitting Color		X4 Serial Number (1)		X5 Serial Number (2)	
Code	Type	Code	Type	Code	Type	Code	Type	Code	Type
EP	EdiPower®	S	Square	W	Cool White	--	--	--	--
				H	Neutral White				
				X	Warm White				

X6 Circuit Series		X7 Circuit Parallel	
Code	Type	Code	Type
1-9	1-9 Series	1-9	1-9 Series
		0-B	10-12 Series

Mechanical Dimensions

4-6W Emitter Dimensions

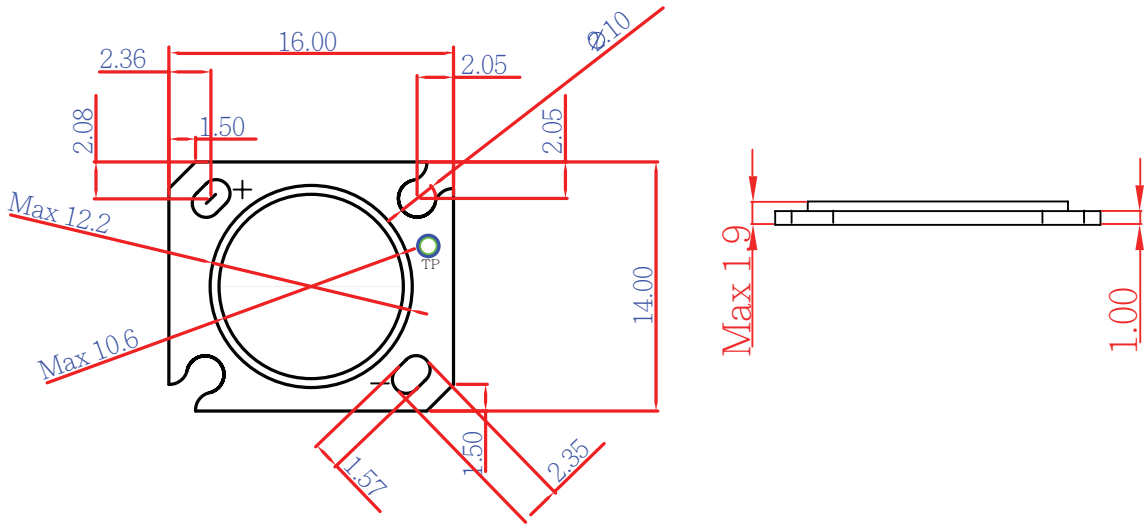


Figure 1. 4-6W EdiPower II Series Dimensions

10-24W Emitter Dimensions

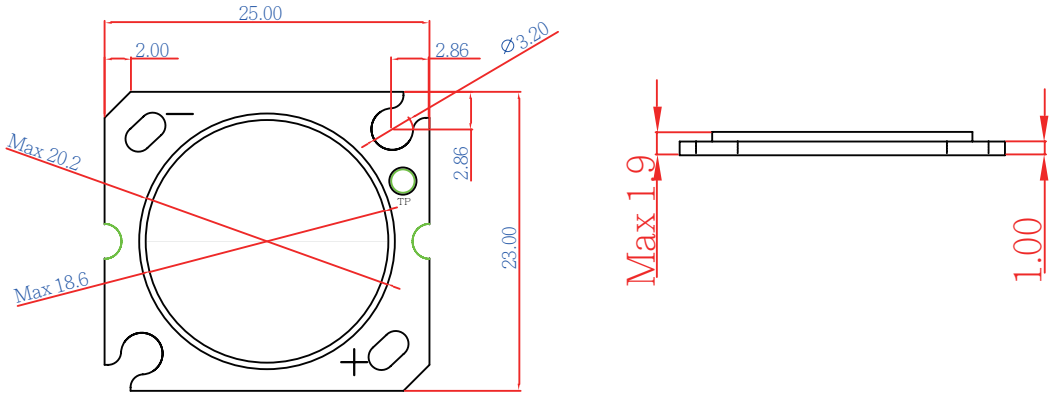


Figure 2. 10-15W/16-24W EdiPower II Series Dimensions

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

25-50W Emitter Dimensions

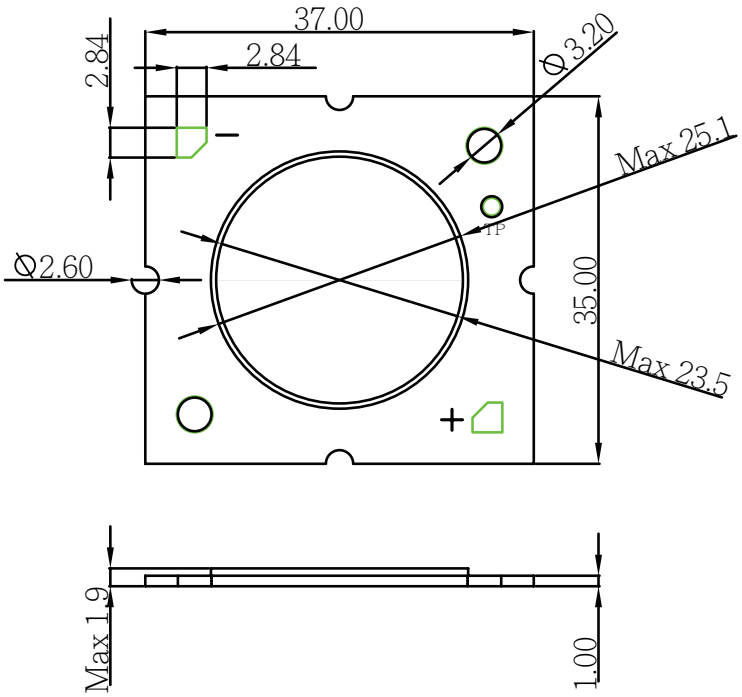


Figure 3. 25-40W/ 40-50W EdiPower II Series Dimensions

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

4-6W Emitter Circuit Layout

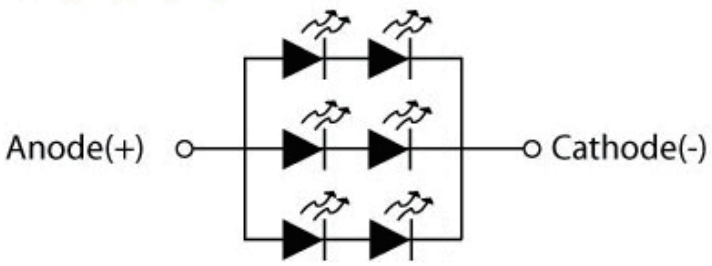


Figure 4. 4-6W EdiPower II Circuit Layout

10-15W Emitter Circuit Layout

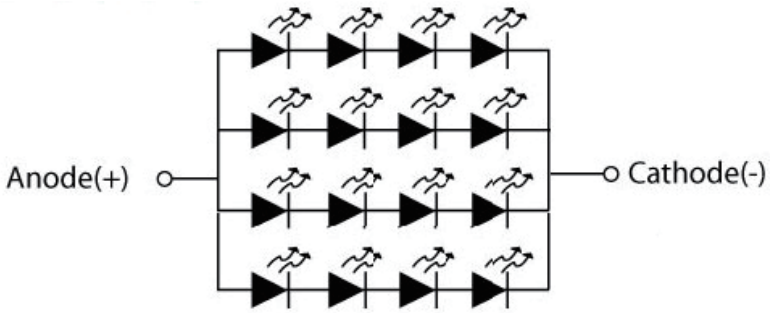


Figure 5. 10-15W EdiPower II Circuit Layout

16-24W Emitter Circuit Layout

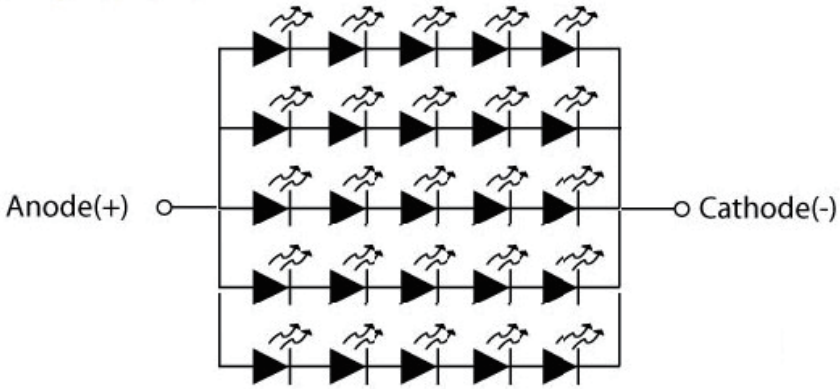


Figure 6. 16-24W EdiPower II Circuit Layout

25-40W Emitter Circuit Layout

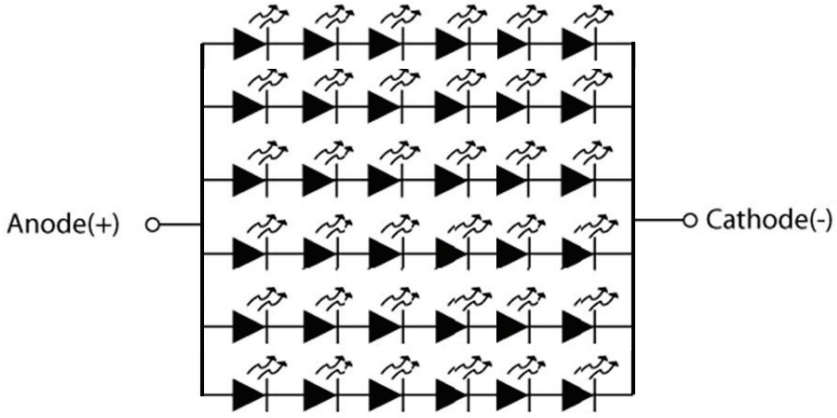


Figure 7. 25-40W EdiPower II Circuit Layout

40-50W Emitter Circuit Layout

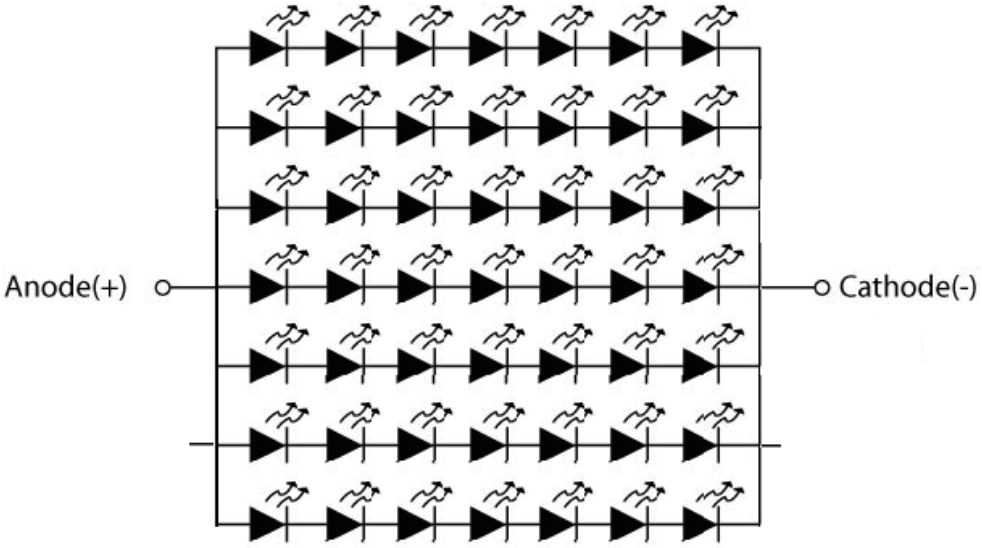


Figure 8. 40-50W EdiPower II Circuit Layout

Absolute Maximum Ratings

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

Table 2. EdiPower® II series absolute maximum ratings

Test	EPSx-Vx23	EPSx-Vx44	EPSx-Vx55	EPSx-Vx66	EPSx-Vx77	Unit	Symbol
DC Forward Current[1]	700-1000	700-1200	1000-1500	1400-2000	1500-2200	mA	I_F
Peak pulse current (tp≤100μs,Duty cycle=0.25	2000	2500	3000	3500	4000	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 series under various current and different color.

Table 3. Luminous flux characteristics for cool white and neutral white at T_J=25˚C for EdiPower® II series.

Color	Part Name	Typical Luminous Flux(lm) T_p=60°C	Typical Luminous Flux(lm) T_J=25°C	Typical Forward Voltage V_F (V)	Forward Current (mA)
Cool White	EPSW-VF23	405	450	6.4	700
		540	590	6.7	1000
	EPSW-VF44	840	940	12.0	700
		1190	1310	12.5	1000
		1390	1550	12.8	1200
	EPSW-VF55	1430	1600	15.5	1000
		1650	1830	16.0	1200
		2030	2250	16.5	1500
	EPSW-VF66	2260	2520	19	1400
		2860	3200	19.5	1800
		3250	3600	19.8	2000
	EPSW-VF77	2750	3030	21.2	1500
		3660	4050	22.0	2000
		4050	4500	22.6	2200
Neutral White	EPSH-VF23	345	385	6.4	700
		450	505	6.7	1000
	EPSH-VF44	740	830	12.0	700
		990	1100	12.5	1000
		1160	1300	12.8	1200
	EPSH-VF55	1155	1320	15.5	1000
		1410	1560	16.0	1200
		1730	1900	16.5	1500
	EPSH-VF66	1890	2100	19	1400
		2430	2700	19.5	1800
		2730	3000	19.8	2000
	EPSH-VF77	2310	2570	21.2	1500
		3100	3450	22.0	2000
		3550	3800	22.6	2200

Notes:
1. EPSx-Vx23:Forward Voltage has ±0.6V tolerance.
2. EPSx-Vx44:Forward Voltage has ±1.2V tolerance.
3. EPSx-Vx55:Forward Voltage has ±1.5V tolerance.
4. EPSx-Vx66:Forward Voltage has ±1.8V tolerance.
5. EPSx-Vx77:Forward Voltage has ±2.1V tolerance.

Table 4. Luminous flux characteristics for warm white at T_J=25˚C for EdiPower® II series.

Color	Part Name	Typical Luminous Flux(lm) T_P=60°C	Typical Luminous Flux(lm) T_J=25°C	Typical Forward Voltage V_F (V)	Forward Current (mA)
Warm White	EPSX-VE23	295	330	6.4	700
		415	460	6.7	1000
	EPSX-VE44	590	660	12.0	700
		840	940	12.5	1000
		970	1100	12.8	1200
	EPSX-VE55	990	1100	15.5	1000
		1160	1380	16.0	1200
		1430	1600	16.5	1500
	EPSX-VE66	1630	1810	19	1400
		2030	2250	19.5	1800
		2270	2500	19.8	2000
	EPSX-VE77	1900	2120	21.2	1500
		2560	2850	22.0	2000
		2840	3150	22.6	2200

Notes:
1. EPSx-Vx23:Forward Voltage has ±0.6V tolerance.
2. EPSx-Vx44:Forward Voltage has ±1.2V tolerance.
3. EPSx-Vx55:Forward Voltage has ±1.5V tolerance.
4. EPSx-Vx66:Forward Voltage has ±1.8V tolerance.
5. EPSx-Vx77:Forward Voltage has ±2.1V tolerance.

Characteristics

Thermal Resistance Junction Characteristics

Table 5. Temperature Coefficient of Forward Voltage & Thermal Resistance Junction to Case Characteristics at T_J=25˚C for EdiPower® II series

Part Name	Test Current (mA)	$\Delta V_F/\Delta T$		$R\theta_{J-B}$	
		Typ.	Unit	Typ.	Unit
EPSx-Vx23	1000	-2 to -8	mV/˚C	1.4	˚C/W
EPSx-Vx44	1200	-5 to -10	mV/˚C	0.7	˚C/W
EPSx-Vx55	1500	-5 to -12	mV/˚C	0.5	˚C/W
EPSx-Vx66	2000	-5 to -13	mV/˚C	0.4	˚C/W
EPSx-Vx77	2200	-8 to -16	mV/˚C	0.2	˚C/W

Optical Characteristics

Table 6. Dominant Wavelength or Color Temperature Characteristics at T_J=25°C for EdiPower II series

Part Name	Color	λd/CCT		Unit
		Min.	Max.	
EPSW-VFxx	Cool White	5000	10000	K
EPSH-VFxx	Neutral White	3800	5000	K
EPSX-VExx	Warm White	2670	3800	K

Notes:
1. CCT is measured with an accuracy of ± 5%.
2. Wavelength is measured with an accuracy of ± 0.5nm.

Characteristic Curve

Spectrum

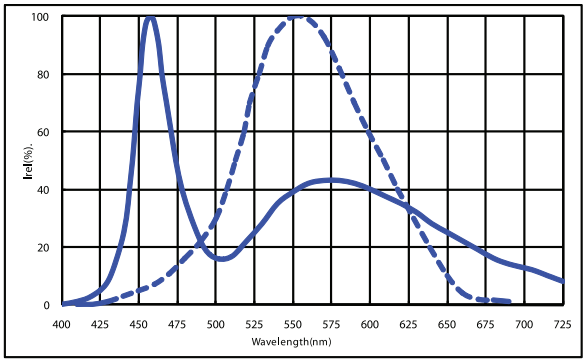


Figure 9. Color spectrum for EdiPower® II cool white

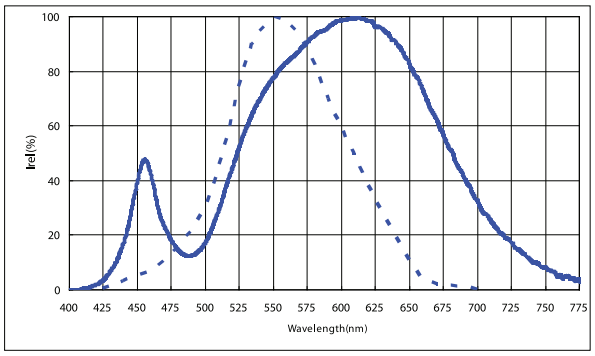


Figure 10. Color spectrum for EdiPower® II warm white and neutral white

Radiation Diagram

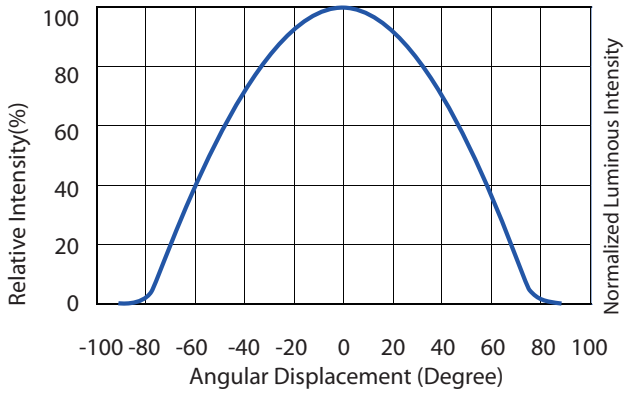


Figure 11. Lambertian at T_J=25°C for EdiPower II series

Luminous Flux & Junction Temperature

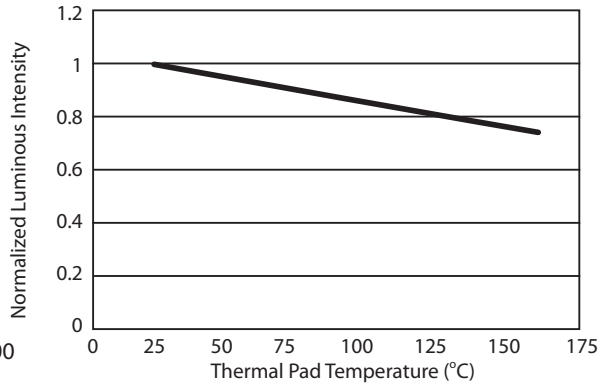


Figure 12. Relative luminous flux vs. thermal pad temperature for Cool White

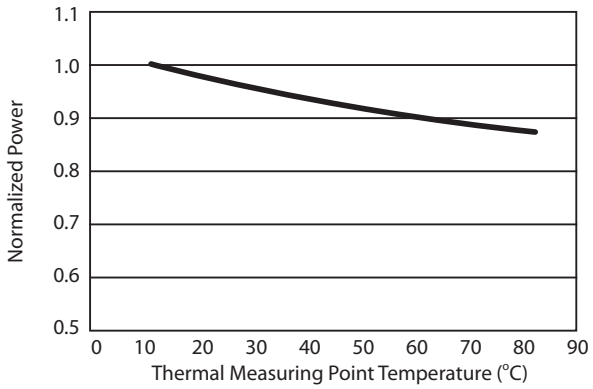


Figure 13. Power output for EdiPower II Star Series

Luminous Flux & Junction Temperature

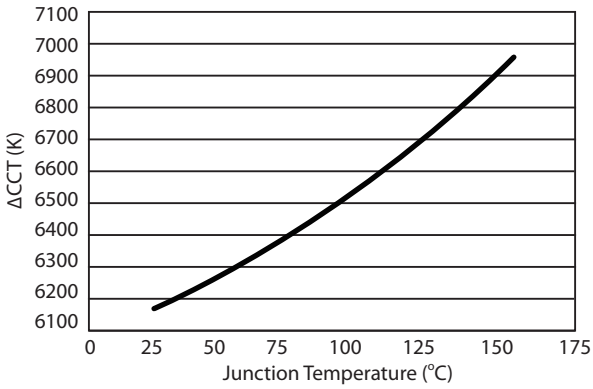


Figure 14. Typical CCT vs. junction temperature for Cool White

CCT & Forward Current

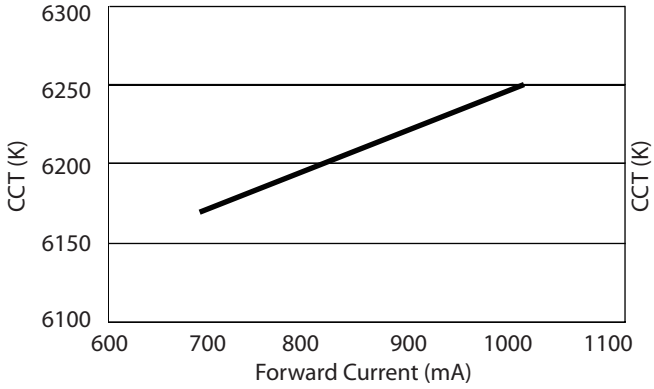


Figure 15. CCT shift for EPSW-VF23

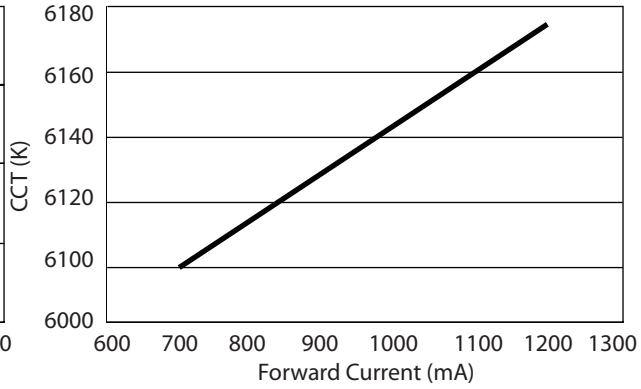


Figure 16. CCT shift for EPSW-VF44

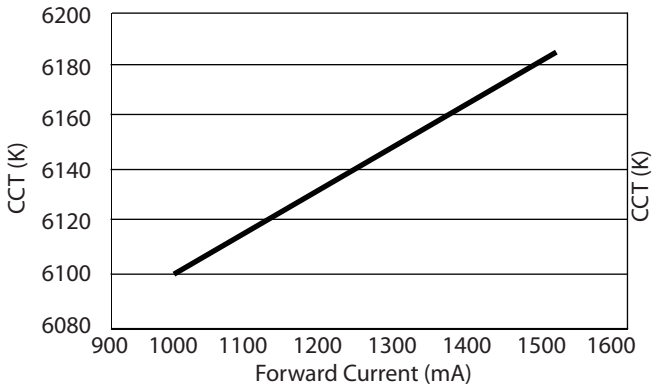


Figure 17. CCT shift for EPSW-VF55

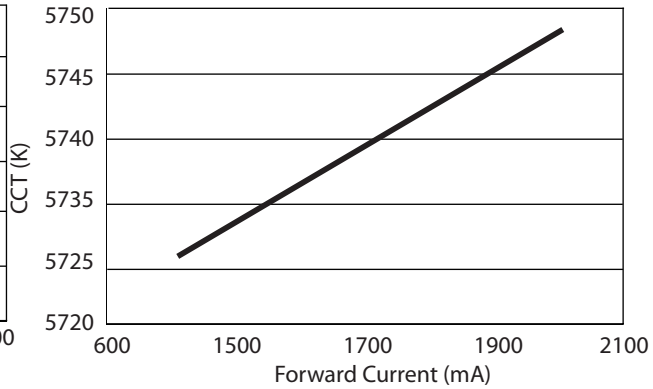


Figure 18. CCT shift for EPSW-VF66

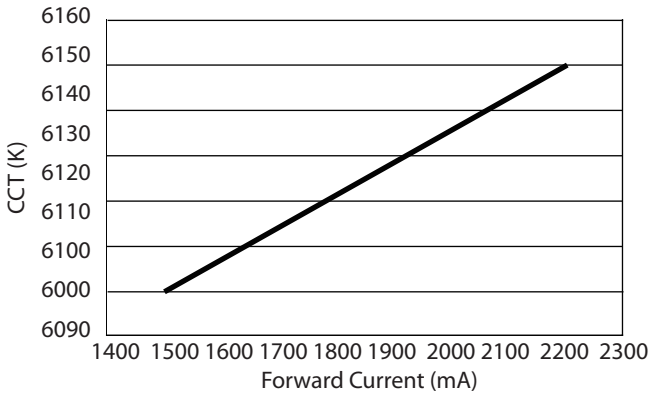
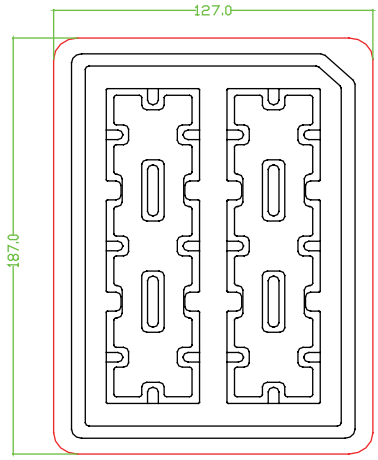


Figure 19. CCT shift for EPSW-VF77

Product Packaging Information

Tray Packing for 4-6W/10-24W



Tray Packing for 25-40W/ 40-50W

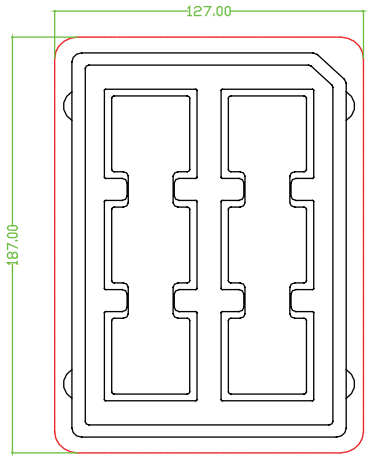


Figure 20. Tray package dimension.

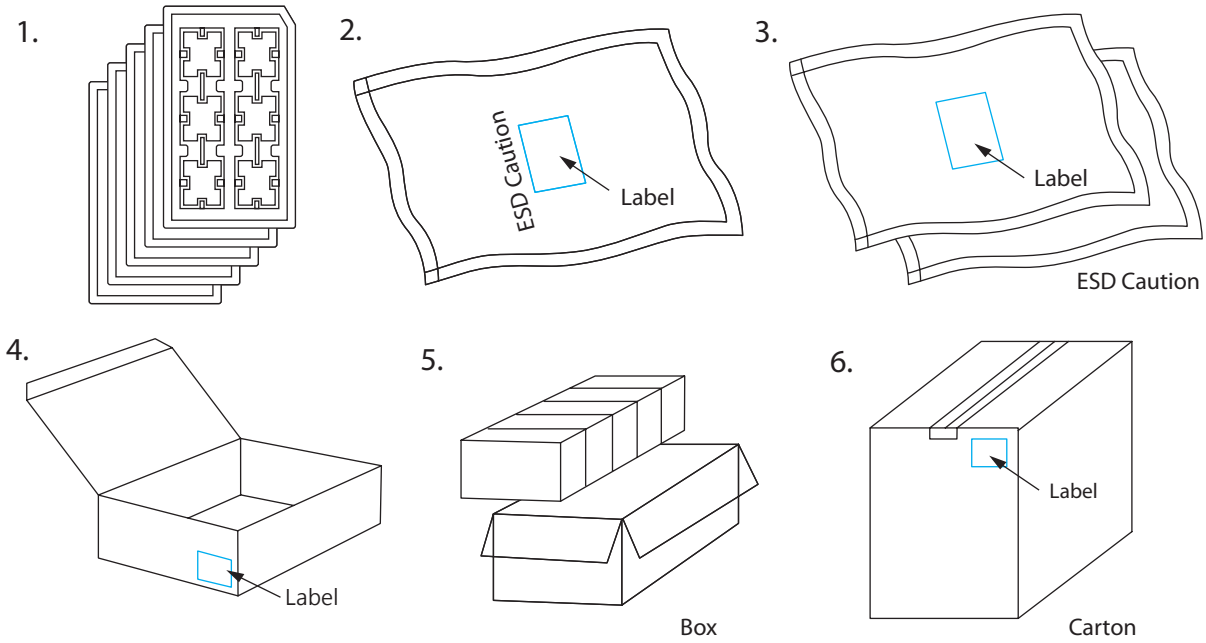


Figure 21. Packaging steps.

Notes:
1. All dimensions are in mm.
2. There are are 4-6W/10-24W 24pcs or 10-24W 25-40W/ 40-50W 6pcs emitters in a full tray.
3. There are 5 trays in a bag.
4. There are 5 bags in a box.
5. There are 5 inner boxes in a carton.
6. A bag contains one humidity indicator card and drying agent.

Lighting Design Manufacturing Service

Revision History

Table 7. Revision history of EdiPower II® series datasheet

Version	Description	Release Date
5	1. Update the layout of datasheet 2. Update the bin group	2011/07/20
6	1.Update dimensions on p.4 2.Update luminous flux on p.8 and p.9	2012/02/21

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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