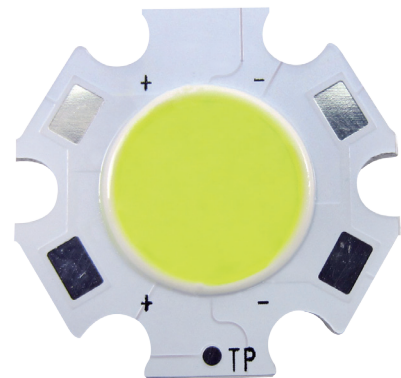


EdiPower® II Series

EdiPower® II Star Series Datasheet



Features :

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

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General Information

Introduction

EdiPower® II Star 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 Star Series Nomenclature

EP		C	X	-	N	F	3	2				
X1		X2	X3		X4	X5	X6	X7				
X1 LED Item		X2 Module		X3 Emitting Color		X4~X5 Serial Number		X6 Circuit Series		X7 Circuit Parallel		
Code	Type	Code	Type	Code	Type	Code	Type	Code	Type	Code	Type	
EP	EdiPower®	C	Star	W	Cool White	--	--	1-9	1-9 Series	1-9	1-9 Series	
				H	Neutral White							
				X	Warm White							

Mechanical Dimensions

Edipower Star Series Emitter Dimensions

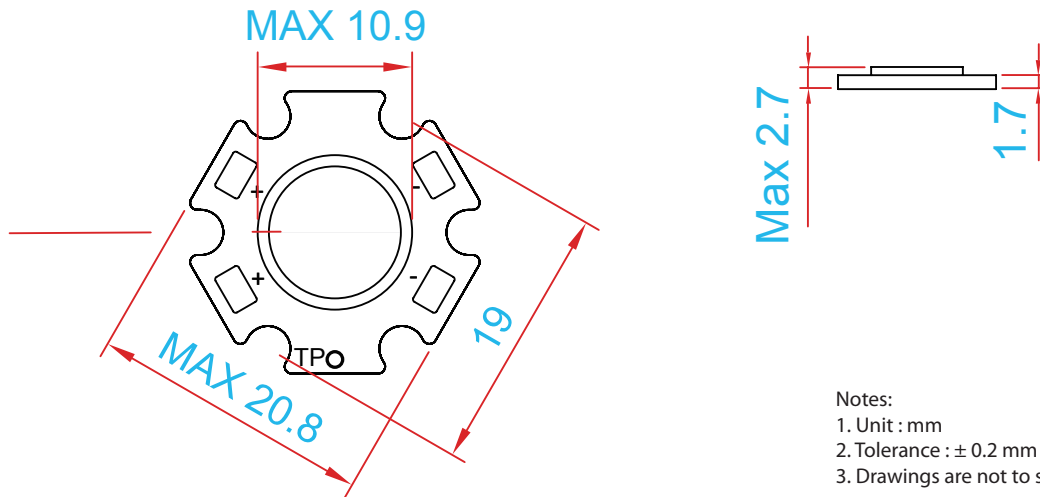


Figure 1. 4-10W Edipower II Star Series Dimensions

Notes:

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

4-6W Emitter Circuit Layout

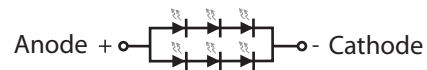


Figure 2. 4-6W Edipower II Star Series Circuit Layout

6W Emitter Circuit Layout

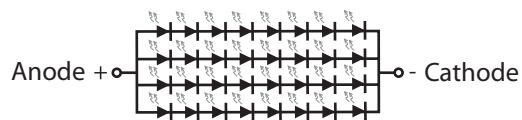


Figure 3. 6W Edipower II Star Series Circuit Layout

6-10W Emitter Circuit Layout

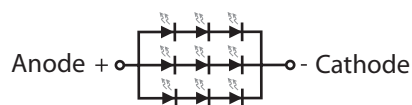


Figure 4. 6-10W Edipower II Star Series Circuit Layout

Absolute Maximum Ratings

The following table describes absolute maximum ratings of EdiPower II Star Series.

Table 2. Absolute maximum ratings for EdiPower II Star Series

Parameter	EPCx-NF32	EPCx-NF33	EPCx-HF84	Unit	Symbol
DC Forward Current ¹	700	1000	250	mA	I_F
Peak pulse current ($t_p \leq 100\mu s$, Duty cycle=0.25)	1000	1500	300	mA	I_{Pulse}
LED junction Temperature ³	125	150	125	°C	T_J
Thermal Measurement Point (T_p)	<75	<80	<75	°C	T_p
Reverse Voltage ²	Note 2			V	V_R
Viewing Angle(FWHM)	105~120			-	degree
Operating Temperature	-40 ~ +110			°C	-
Storage Temperature	-40 ~ +120			°C	-
ESD Sensitivity	2,000			V	V_B
Isolation Voltage	1,000			V	-

Notes:

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

Luminous Flux Characteristics

The following tables describe luminous flux of EdiPower II Star Series under various current.

Table 3. Luminous flux characteristics at $T_J=25^\circ\text{C}$ for EdiPower II Star Series

Part Number	Color	Typical Flux(lm) $T_{case}=60^\circ\text{C}$	Min Flux(lm) $T_J=25^\circ\text{C}$	Typical Flux(lm) $T_J=25^\circ\text{C}$	Typical Forward Voltage V_F (V)	Forward Current (mA)
EPCW-NF32	Cool White	530	520	580	9.6	700
EPCH-NF32	Neutral White	460	450	500	9.6	700
EPCX-NF32	Warm White	400	390	440	9.6	700
EPCW-NF33	Cool White	755	740	820	9.6	1000
EPCX-NF33	Warm White	590	580	640	9.6	1000
EPCW-HF84	Cool White	605	590	660	26.5	250
EPCX-HF84	Warm White	530	520	580	26.5	250

Notes:

- EPCx-Nx3x: Forward Voltage has $\pm 0.9\text{V}$ tolerance.
- EPCx-HF84: Forward Voltage has $\pm 2.4\text{V}$ tolerance.

Characteristics

Optical Characteristics

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

Part Name	Color	λ_d/CCT		Unit
		Min.	Max.	
EPCW-xxxx	Cool White	5,000	10,000	K
EPCH-xxxx	Neutral White	3,800	5,000	K
EPCX-xxxx	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 Star Series

Part Name	Test Current (mA)	$\Delta V_F/\Delta T$		$R\theta_{J-B}$	
		Typ.	Unit	Typ.	Unit
EPCx-NF32	700	-2 to -6	mV/ $^\circ\text{C}$	3.6	$^\circ\text{C}/\text{W}$
EPCx-NF33	1000	-2 to -8	mV/ $^\circ\text{C}$	3.0	$^\circ\text{C}/\text{W}$
EPCx-HF84	250	-8 to -14	mV/ $^\circ\text{C}$	1.4	$^\circ\text{C}/\text{W}$

Characteristic Curve

Spectrum

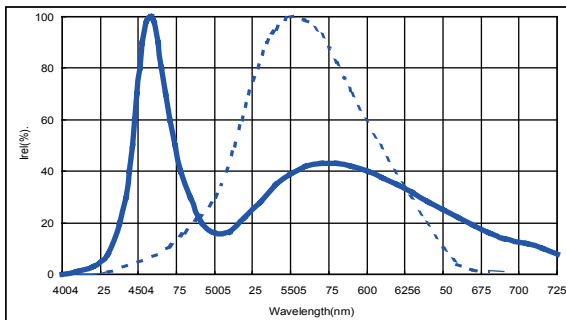


Figure 5. Color spectrum for EdiPower® II Star series cool white

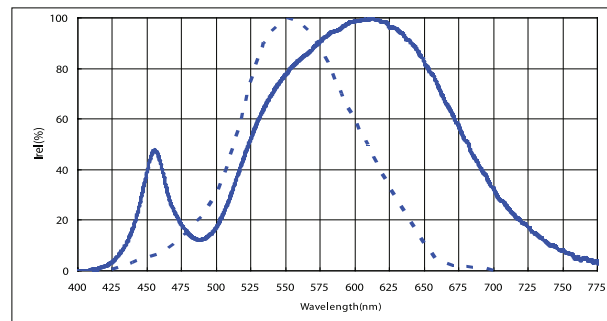


Figure 6. Color spectrum for EdiPower® II Star series warm white

Radiation Diagram

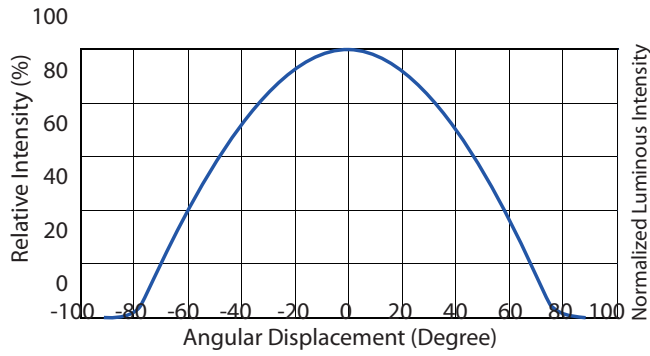


Figure 7. Lambertian at $T_J=25^\circ\text{C}$ for EdiPower® II Star series

Luminous Flux & Junction Temperature

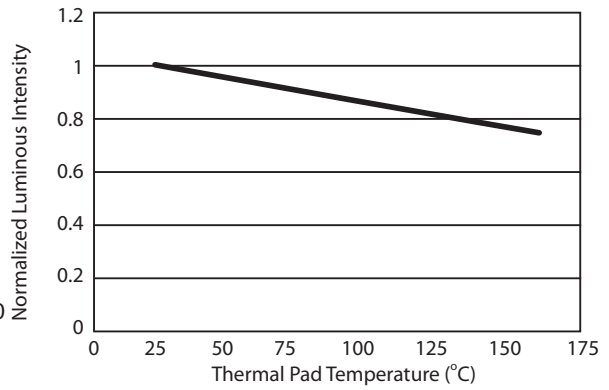


Figure 8. Relative luminous flux vs. thermal pad temperature

CCT & Forward Current

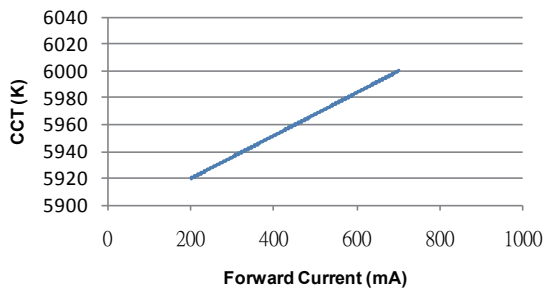


Figure 9. CCT shift for EPCW-NF32

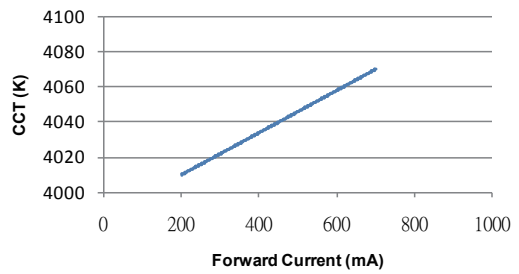


Figure 10. CCT shift for EPCH-NF32

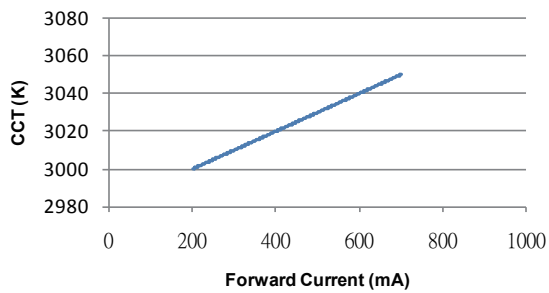


Figure 11. CCT shift for EPCX-NF32

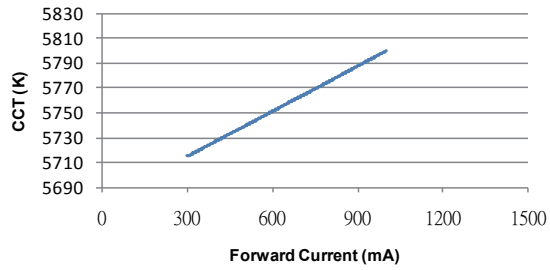


Figure 12. CCT shift for EPCW-NF33

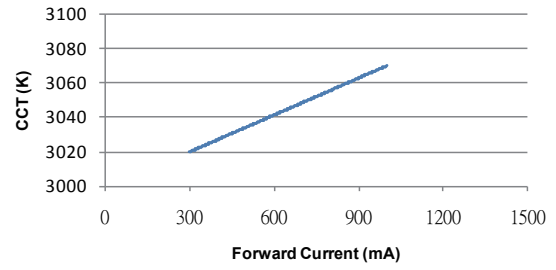


Figure 13. CCT shift for EPCX-NF33

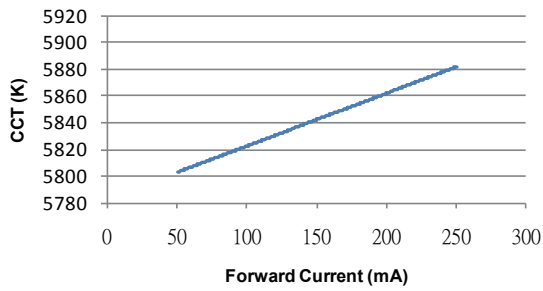


Figure 14. CCT shift for EPCW-HF84

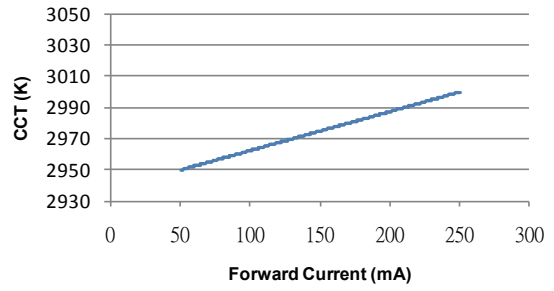


Figure 15. CCT shift for EPCX-HF84

CCT & Junction Temperature

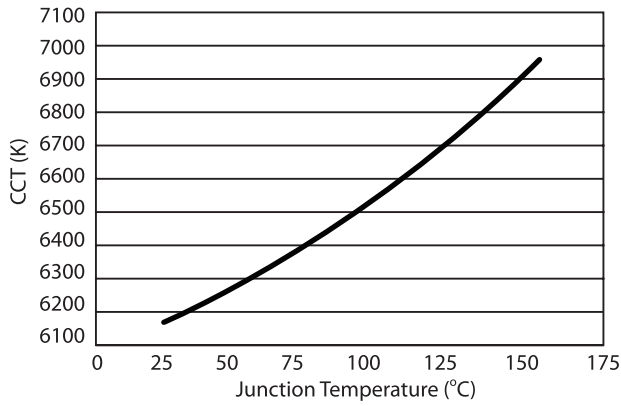


Figure 16. Typical CCT vs. junction temperature for Cool White

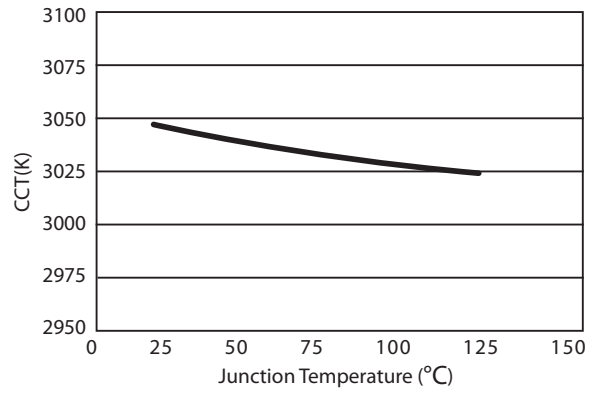


Figure 17. Typical CCT vs. junction temperature for Warm White

Power Output vs. Thermal Measuring Point Temperature

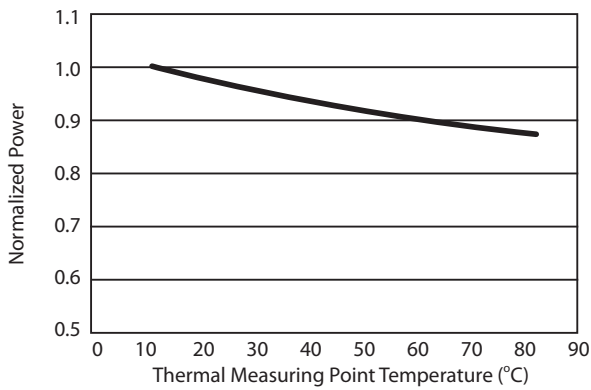


Figure 18. Power output for EdiPower II Star Series

Forward Current vs. Luminous Flux

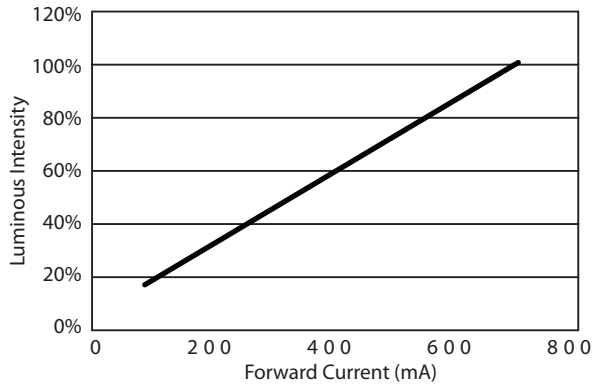


Figure 19. Forward current vs. Relative luminous flux for EPCx-Nx32

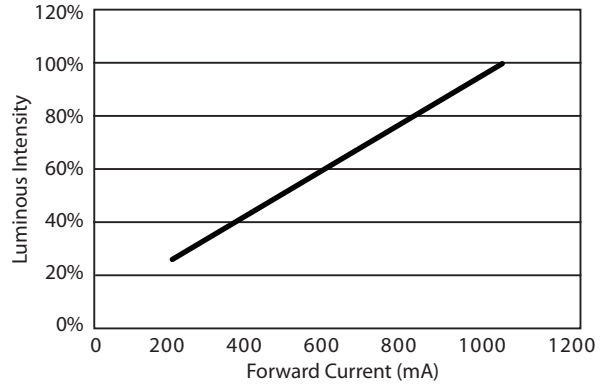


Figure 20. Forward current vs. Relative luminous flux for EPCx-Nx33

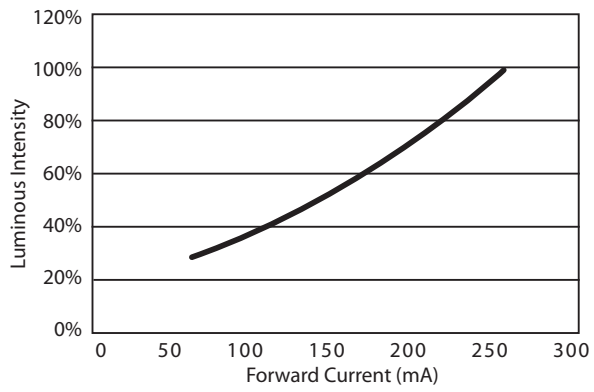


Figure 21. Forward current vs. Relative luminous flux for EPCx-HF84

Product Packaging Information

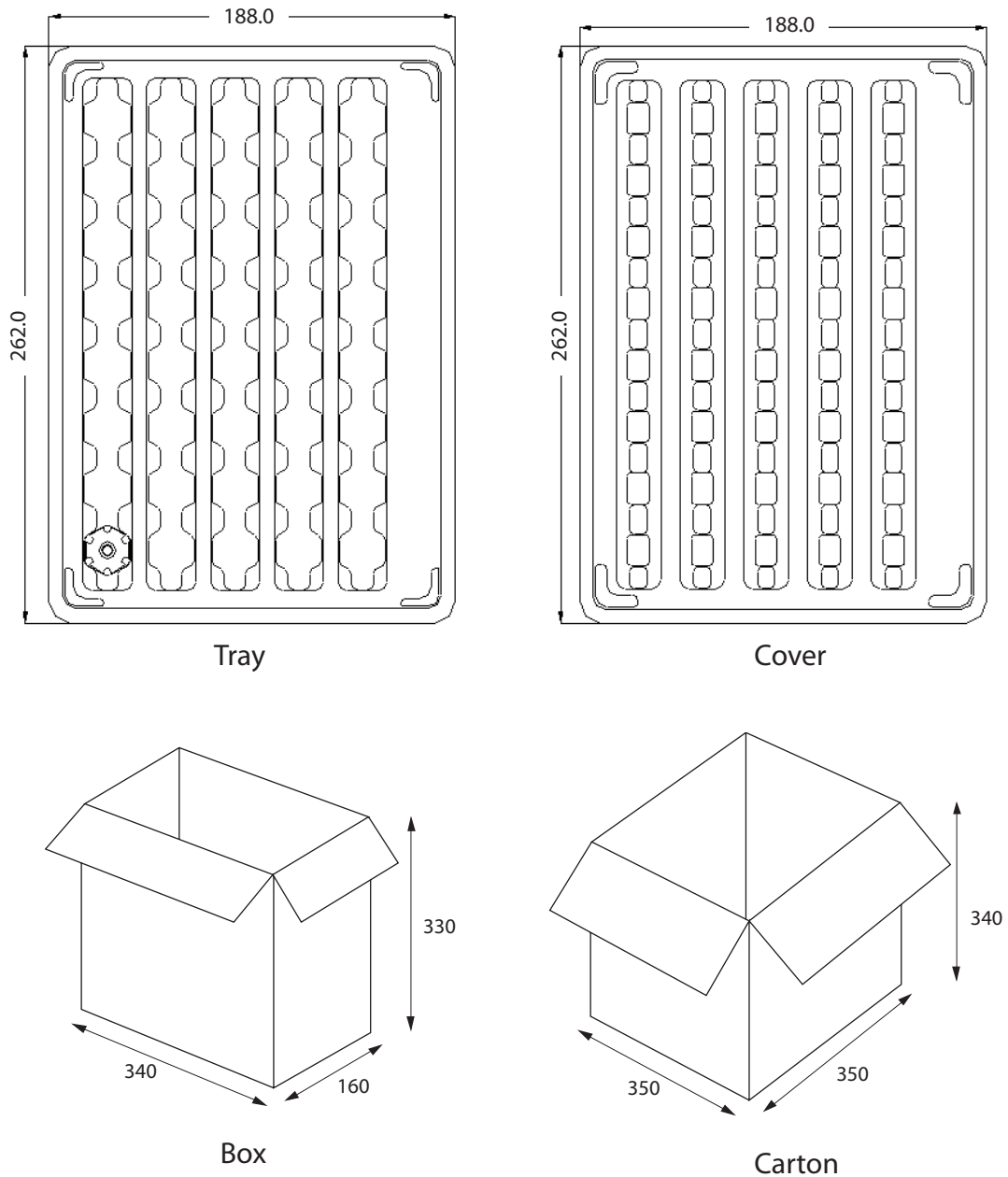


Figure 22. Packaging steps.

Notes:

1. All dimensions are in mm.
2. There are 40pcs stars in a 4-10W star tray.
3. There are 10 trays in a box.
4. There are 2 inner boxes in a carton.

Revision History

Table 6. Revision history of EdiPower® II Star.

Versions	Modification	Date
2	1. Update the layout of datasheet 2. Update the luminous flux with bin group	2011/07/20
3	1. Establish the Cool White data	2011/09/09
4	1.Update part numbers 2.Delete the bin groups	2011/12/07
5	1. Update Dimensions on p.4 2. Update luminous flux on p.4 3.Update thermal resistance on p.6 4. Add packaging information on p.8	2012/02/21
6	1. CCT & Junction Temperature> CCT & Forward Current p.8 2. Add Figure 13. CoolWhite p.8 3.Add Figure 14. WarmWhite p.8	2012/03/22
7	1.Add H Neutral White	2012/08/10
8	1.Update Dimensions on p.4 2.Add Forward Current vs. Luminous Flux P.8	2012/10/05

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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