

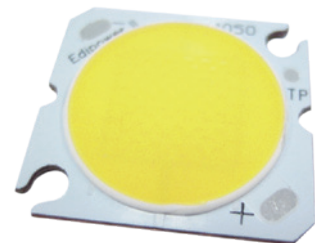


Lighting Design Manufacturing Service

www.edison-opto.com

EdiPower® II HV Series

EdiPower® II HV Series Datasheet



Features :

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



Lighting Design Manufacturing Service

Table of Contents

General Information	3
Introduction	3
Product Nomenclature	3
Mechanical Dimensions	3
9W Emitter Dimensions	3
13W Emitter Dimensions	4
9W Emitter Circuit Layout	4
13W Emitter Circuit Layout	4
Absolute Maximum Ratings	5
Luminous Flux Characteristics	6
Characteristics	6
Thermal Resistance Characteristics	6
Optical Characteristics	6
Characteristic Curve	7
Spectrum	7
Radiation Diagram	7
CCT & Junction Temperature	7
Luminous Flux & Junction Temperature	7
Power Output	7
CCT & Forward Current	8
Product Packaging Information	9
Revision History	10
About Edison Opto	10

General Information

Introduction

EdiPower® II HV 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 color, power, and lens type. For more flux and forward voltage information, please consult the Bin Group document.

Table 1. EdiPower® II HV Series Nomenclature

E P S x - H F B 4

X1 X2 X3 X4 X5 X6 X7

X1		X2		X3		X4~X5		X6		X7	
LED Item		Emitter Type		Emitting Color		Serial No.		Circuit Series		Circuit Parallel	
Code	Type	Code	Type	Code	Type			Code	Type	Code	Type
EP	EdiPower®	S	Square	W	Cool White			1~9	1~9 Series	1~9	1~9 Parallel
				X	Warm White			A,B...	11,12...Series		

Mechanical Dimensions

9W Emitter Dimensions

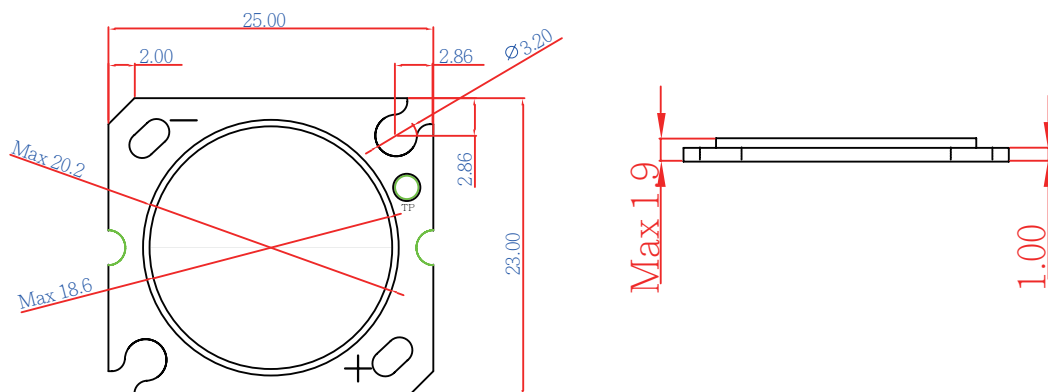


Figure 1. 9W EdiPower® II HV Series Dimensions

13W Emitter Dimensions

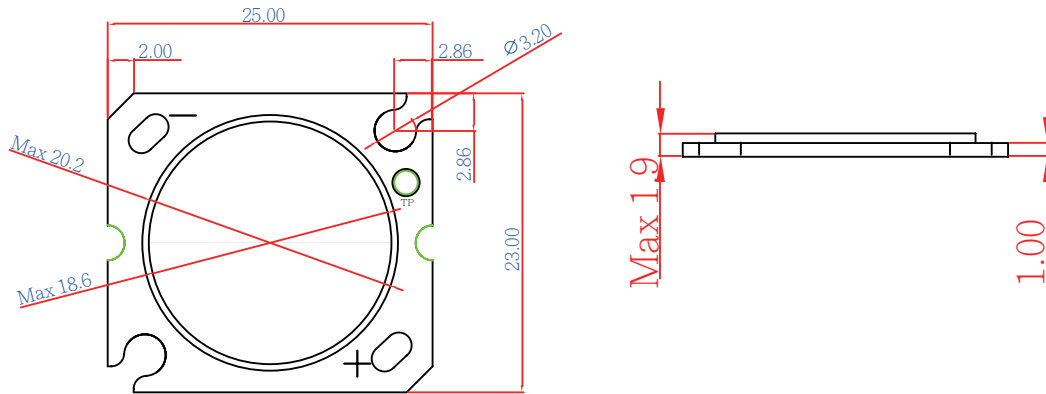


Figure 2. 13W EdiPower® II HV Series Dimensions

Notes:

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

9W Emitter Circuit Layout

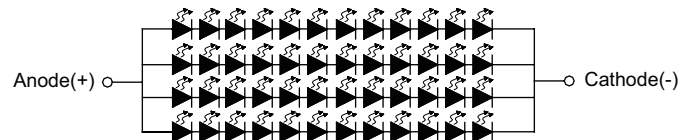


Figure 3. 9W EdiPower® II HV Series Circuit Layout

13W Emitter Circuit Layout

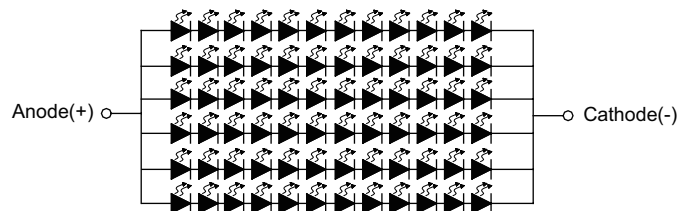


Figure 4. 13W EdiPower® II HV Series Circuit Layout

Absolute Maximum Ratings

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

Table 2. EdiPower® II HV series absolute maximum ratings

Test	EPSx-HFB4	EPSx-HFB6	Unit	Symbol
DC Forward Current ¹	180~250	250~350	mA	I _F
Max Forward Current	250	360	mA	I _F
Peak pulse current (tp≤100μs,Duty cycle=0.25)	300	400	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 (TP)	<80		°C	
ESD Sensitivity	2,000		V	V _B
Isolation Voltage	1,000		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 HV series under various current and different color.

Table 3. Luminous flux characteristics at $T_j=25^{\circ}\text{C}$ for EdiPower® II HV series.

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-HFB4	680	750	37.5	180
		870	970	38.7	250
	EPSW-HFB6	930	1020	37.3	250
		1250	1380	38.5	350
Warm White	EPSX-HFB4	630	690	37.5	180
		810	900	38.7	250
	EPSX-HFB6	880	970	37.3	250
		1110	1250	38.5	350

Note:
EPSx-HFBx:Forward Voltage has $\pm 3.6\text{V}$ tolerance.

Characteristics

Thermal Resistance Characteristics

Table 4. Temperature Coefficient of Forward Voltage & Thermal Resistance Junction to Case Characteristics at $T_j=25^{\circ}\text{C}$ for EdiPower® II HV series

Part Name	Test Current (mA)	$\Delta V_F/\Delta T$		$R\theta_{J-B}$	
		Typ.	Unit	Typ.	Unit
EPSx-HFB4	250	-8 to -16	mV/ $^{\circ}\text{C}$	3.0	$^{\circ}\text{C}/\text{W}$
EPSx-HFB6	350	-8 to -16	mV/ $^{\circ}\text{C}$	2.4	$^{\circ}\text{C}/\text{W}$

Optical Characteristics

Table 5. Dominant Wavelength or Color Temperature Characteristics at $T_j=25^{\circ}\text{C}$ for EdiPower® II HV series

Part Name	Color	λ_d/CCT		Unit
		Min.	Max.	
EPSW-HFxx	Cool White	5,000	10,000	K
EPSX-HFxx	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 $\pm 0.5\text{nm}$.

Characteristic Curve

Spectrum

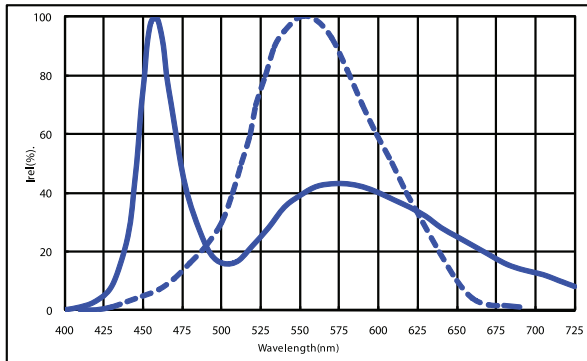


Figure 5. Color spectrum for EdiPower® II HV series cool white

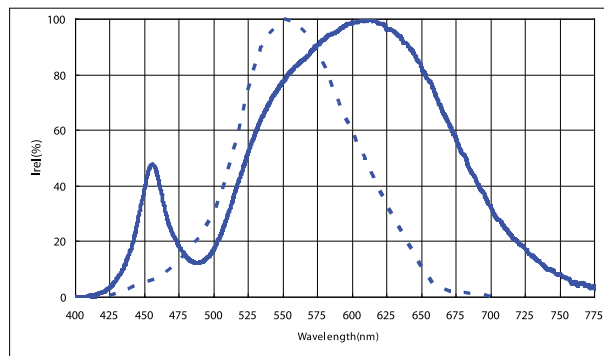


Figure 6. Color spectrum for EdiPower® II HV series warm white and neutral white

Radiation Diagram

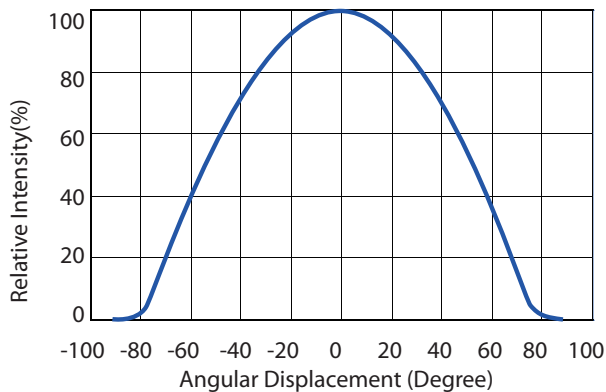


Figure 7. Lambertian at $T_j=25^\circ\text{C}$ for EdiPower® II HV series

Luminous Flux & Junction Temperature

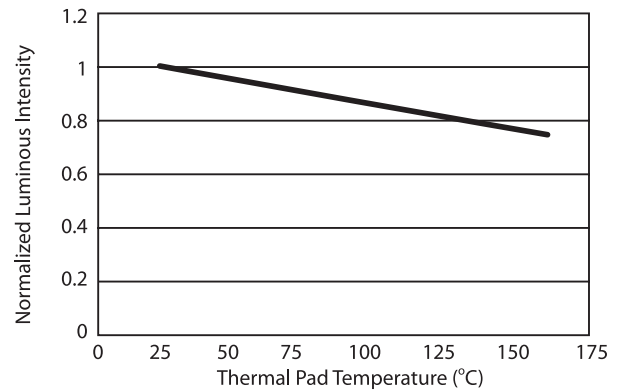


Figure 8. Relative luminous flux vs. thermal pad temperature for Cool White

CCT & Junction Temperature

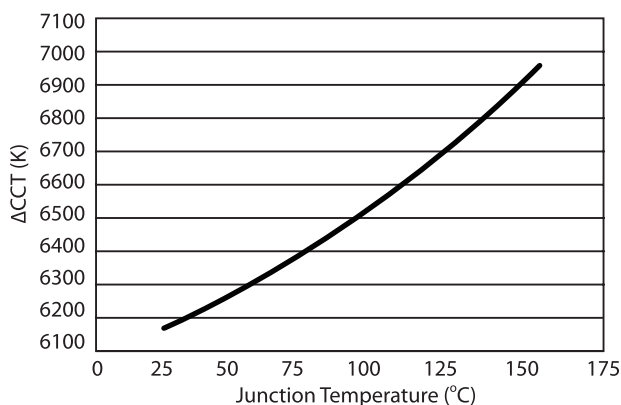


Figure 9. Typical CCT vs. junction temperature for Cool White

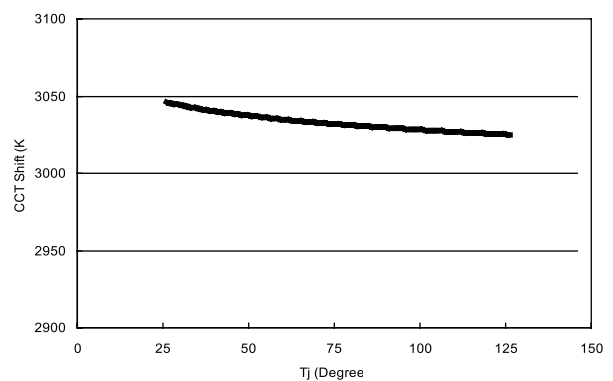


Figure 10. Typical CCT vs. junction temperature for Warm White

Power Output

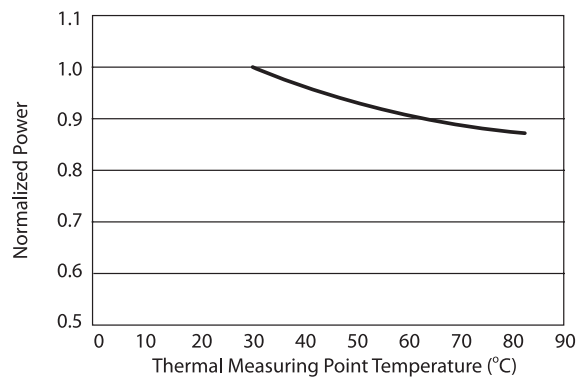


Figure 11. Power output for EdiPower® II HV series

CCT & Forward Current

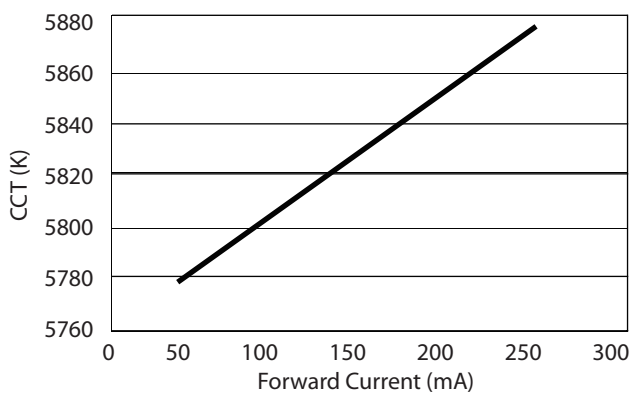


Figure 12. CCT shift for EPSW-HFB4

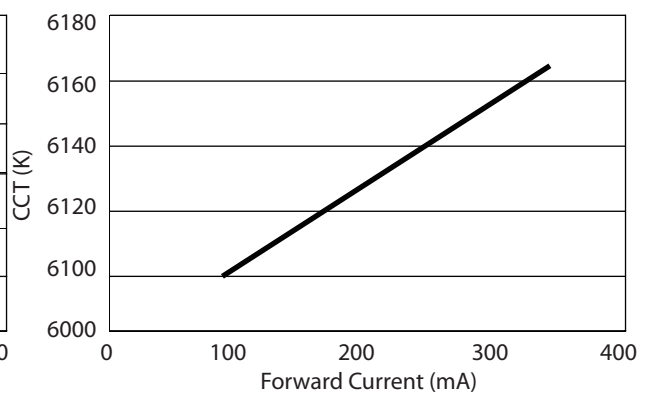


Figure 13. CCT shift for EPSW-HFB6

Product Packaging Information

Tray Packing for 9W or 13W

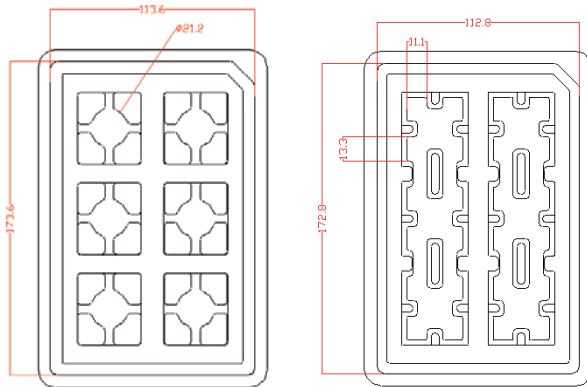


Figure 14. Tray package dimension.

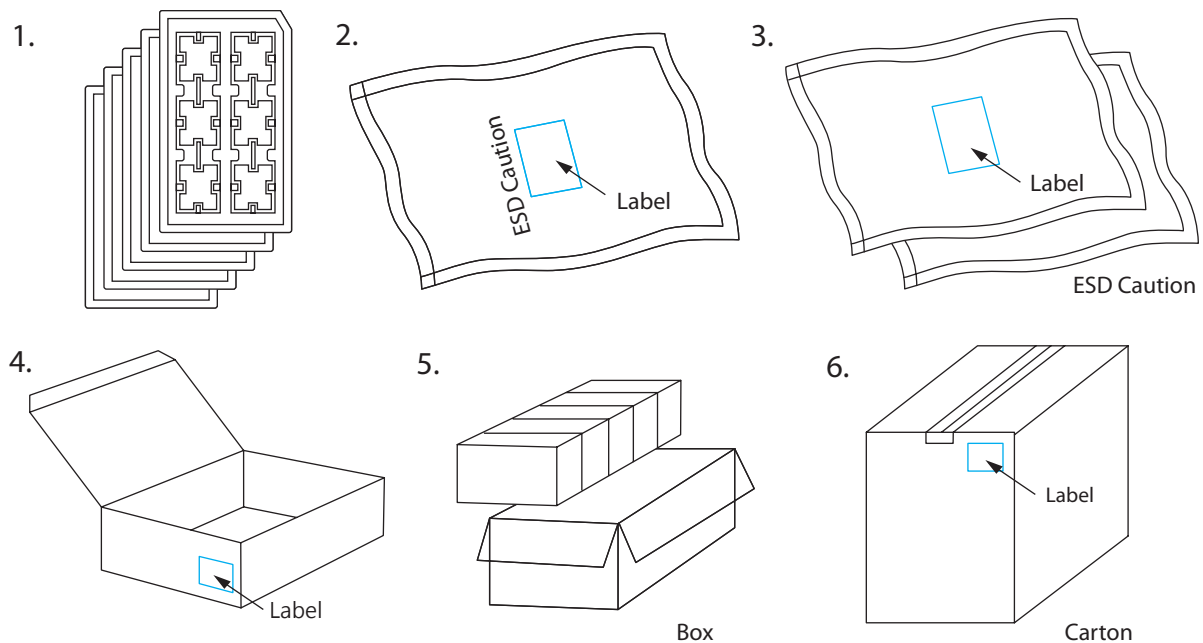


Figure 15. Packaging steps.

Notes:

1. All dimensions are in mm.
2. There are 9W 6pcs or 13W 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 boxes in a carton.
6. A bag contains one humidity indicator card and drying agent.

Revision History

Table 6. Revision history of EdiPower II® series datasheet

Version	Description	Release Date
1	1. Establish a datasheet	2011/03/22
2	1.Update color,voltage and Luminous on p.7	2011/05/06
3	1.Update Bin group on p.16~19	2011/06/13
4	1. Update Bin group	2011/08/05
5	1. Update the layout of datasheet 2. Update the bin group	2012/02/21
6	1. Add Figure 10. Typical CCT vs. junction temperature for Warm White	2012/03/22

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

Copyright©2012 Edison Opto. All rights reserved. No part of publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photo copy, recording or any other information storage and retrieval system, without prior permission in writing from the publisher. The information in this publication are subject to change without notice.

www.edison-opto.com

For general assistance please contact:
service@edison-opto.com.tw

For technical assistance please contact:
LED.Detective@edison-opto.com.tw