

High Power LEDs

EdiLine IV Series Datasheet



Features :

- Linear Packaging Design
- High Efficiency
- Low Power Consumption
- Long Operating Lifespan
- Easy Installation with Screws

Typical Applications :

- General lighting
- Contour lights
- Ceiling lights
- Decoration lights
- Architectural lighting



Lighting Design Manufacturing Service

Table of Contents

General Information.....	3
Introduction.....	3
Product Nomenclature.....	3
Mechanical Dimensions.....	4
Emitter Dimensions.....	4
Circuit Layout.....	4
Absolute Maximum Ratings	5
Luminous Flux Characteristics.....	6
Characteristics	6
Optical Characteristics.....	6
Thermal Resistance	6
Characteristic Curve	7
Spectrum	7
Forward Voltage & Forward Current	7
Luminous Flux & Forward Current	7
Bin Groups	8
Cool White, Neutral White and Warm White X, Y Groups.....	9
Photometric Luminous Flux Bins for Cool White, Neutral White and Warm White	8
Packaging Information.....	11
Tray Packing for 3W 6W or 10W.....	11
Revision History	12
About Edison Opto	12



Lighting Design Manufacturing Service

General Information

Introduction

The linear structure of EdiLine IV Series results in an easier heat dissipation requirement, making versatile fixtures design possible as well as an overall cost saving benefit. The special twin connectors design allows EdiLine to be assembled easily with screws in either serial order as a linear light source or parallel order as a planar light source.

Product Nomenclature

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

Table 1. EdiLine IV series nomenclature

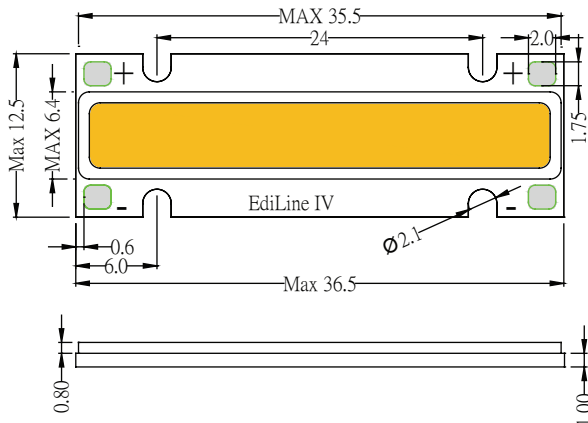
E L S X - H F 3 6
 X1 X2 X3 X4 X5 X6 X7

X1 LED Item		X2 Emitter Type		X3 Emitting Color		X4 Serial Number (1)		X5 Serial Number (2)	
Code	Type	Code	Type	Code	Type	Code	Type	Code	Type
EL	EdiLine	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 Parallel
		0-B	10-12 Parallel

Mechanical Dimensions

Emitter Dimensions



Notes:

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

Figure 1. 3-10W EdiLine IV Series Dimensions

Circuit Layout

3W Emitter Circuit Layout

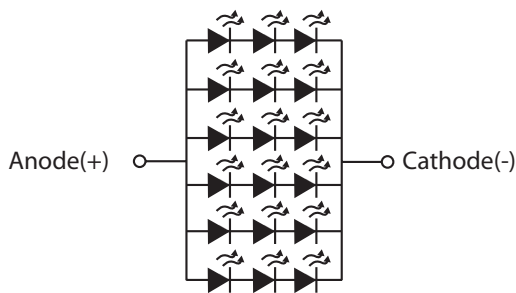


Figure 2. 3W EdiLine IV Series Circuit Layout

6W Emitter Circuit Layout

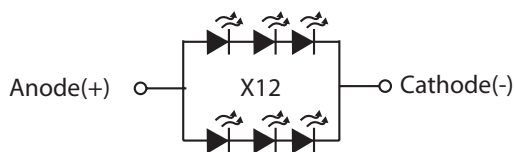


Figure 3. 6W EdiLine IV Series Circuit Layout

10W Emitter Circuit Layout

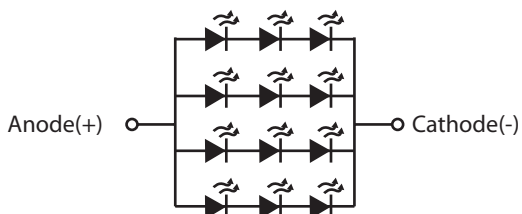


Figure 4. 10W EdiLine IV Series Circuit Layout

Absolute Maximum Ratings

Table 2. Absolute maximum ratings for EdiLine IV series

Test	ELSx-HF36	ELSx-HF3B	ELSx-NF34	Unit	Symbol
DC Forward Current ¹	350	700	1000	mA	I_F
Peak pulse current ($t_p \leq 100\mu s$, Duty cycle=0.25)	400	750	2000	mA	I_{Pulse}
LED junction Temperature ³	125	125	150	°C	T_J
Thermal Measurement Point (TP)	<75	<75	<80	°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

Table 3. Luminous flux characteristics at $T_j=25^{\circ}\text{C}$ for EdiLine IV series

Color	Part No.	Typical Flux(lm) $T_{\text{case}}=60^{\circ}\text{C}$	Typical Flux(lm) $T_j=25^{\circ}\text{C}$	Typical Forward Voltage V_f (V)	Forward Current (mA)	CRI
Cool White	ELSW-HF36	310	340	9.5	350	70
Neutral White	ELSH-HF36	290	320	9.5	350	75
Warm White	ELSX-HF36	280	310	9.5	350	80
Cool White	ELSW-HF3B	635	700	9.7	700	70
Neutral White	ELSH-HF3B	585	645	9.7	700	75
Warm White	ELSX-HF3B	570	625	9.7	700	80
Cool White	ELSW-NF34	720	800	9.8	1,000	70
Neutral White	ELSH-NF34	670	740	9.8	1,000	75
Warm White	ELSX-NF34	575	630	9.8	1,000	80

Note:

ELSx-xF3x:Forward Voltage has $\pm 0.9\text{V}$ tolerance.

Characteristics

Optical Characteristics

Table 4. Dominant Wavelength or Color Temperature Characteristics at $T_j=25^{\circ}\text{C}$ for EdiLine IV Series

Part No.	Color	λ_d/CCT		Unit
		Min.	Max.	
ELSx-Hx36	Cool White	5,000	10,000	K
ELSx-Hx3B	Neutral White	3,800	5,000	K
ELSx-Nx34	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

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

Part No.	Test Current (mA)	$\Delta V_f/\Delta T$		$R\theta_{J-B}$	
		Typ.	Unit	Typ.	Unit
ELSx-Hx36	350	-8 to -16	$\text{mV}/^{\circ}\text{C}$	6.4	$^{\circ}\text{C}/\text{W}$
ELSx-Hx3B	700	-8 to -16	$\text{mV}/^{\circ}\text{C}$	5.0	$^{\circ}\text{C}/\text{W}$
ELSx-Nx34	1,000	-2 to -8	$\text{mV}/^{\circ}\text{C}$	1.4	$^{\circ}\text{C}/\text{W}$

Characteristic Curve

Spectrum

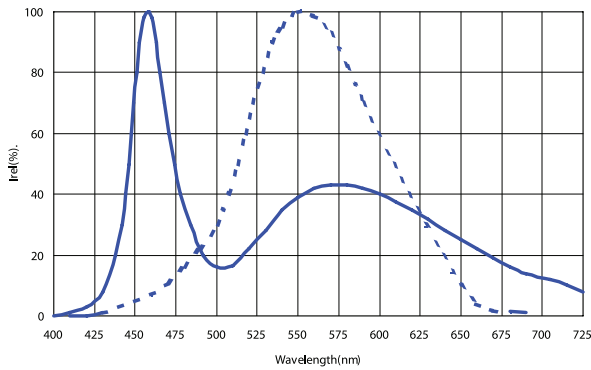


Figure 5. Color spectrum for EdilLine IV series cool white

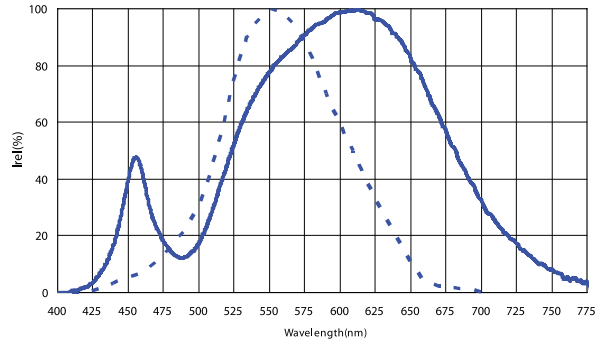


Figure 6. Color spectrum for EdilLine IV series warm white

Forward Voltage & Forward Current

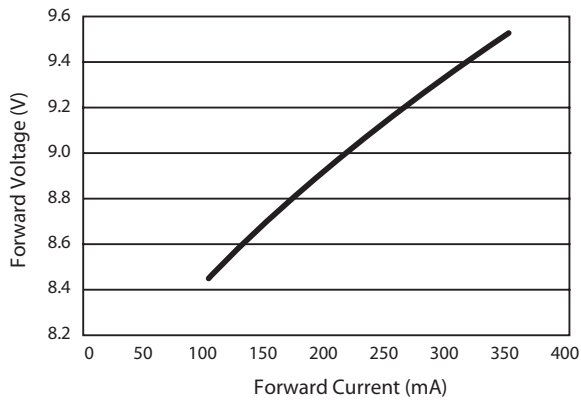


Figure 7. Electrical characteristics for ELSx-Hx36

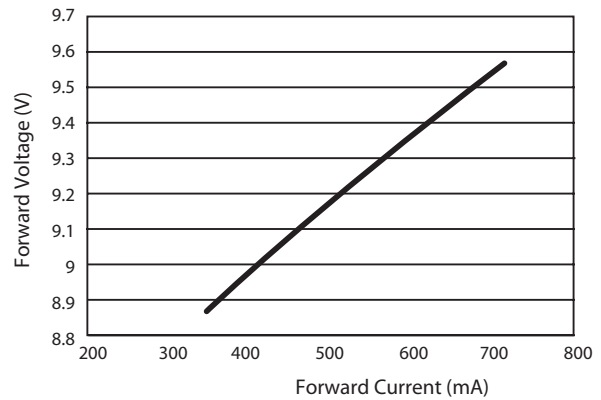


Figure 8. Electrical characteristics for ELSx-Hx3B

Luminous Flux & Forward Current

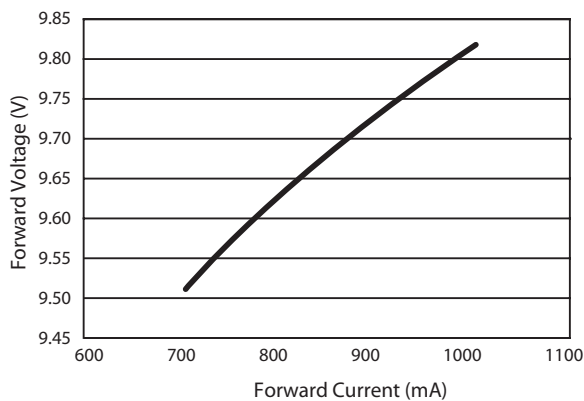


Figure 9. Electrical characteristics for ELSx-Nx34

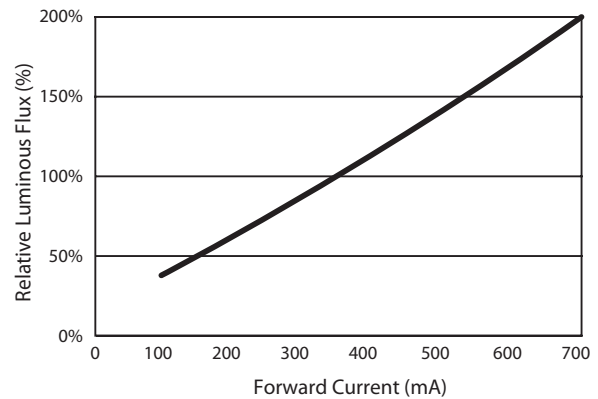


Figure 10. Forward current vs. Relative luminous flux for ELSx-HF36

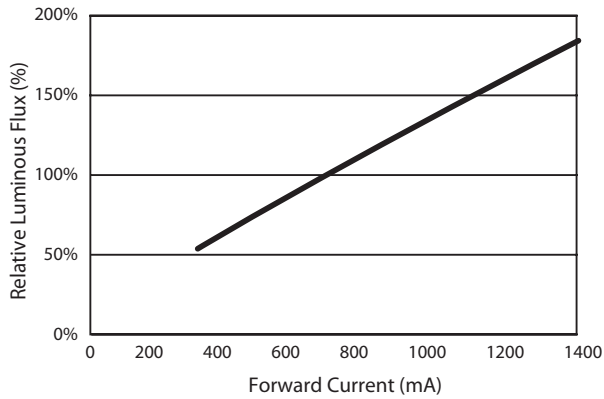


Figure 11. Forward current vs. Relative luminous flux for EL5x-HF3B

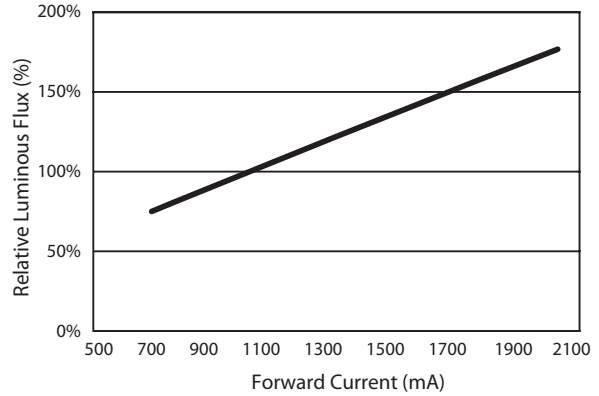


Figure 12. Forward current vs. Relative luminous flux for EL5x-NF34

Bin Groups

Photometric Luminous Flux Bins for Cool White, Neutral White and Warm White

Table 6. Photometric Luminous Flux Ranks

Group	Min.	Max.	Group	Min.	Max.
A1	10	50	L1	1060	1220
A2	50	90	L2	1220	1380
A3	90	100	M1	1380	1585
B0	100	130	M2	1585	1790
C1	130	150	N1	1790	2060
C2	150	170	N2	2060	2330
D0	170	220	P1	2330	2680
E1	220	255	P2	2680	3030
E2	255	290	Q1	3030	3485
F1	290	330	Q2	3485	3940
F2	330	370	R1	3940	4530
G1	370	425	R2	4530	5120
G2	425	480	S1	5120	5885
H1	480	555	S2	5885	6650
H2	555	630	T1	6650	7650
J1	630	725	T2	7650	8650
J2	725	820	U	8650	11250
K1	820	940	V	11250	14620
K2	940	1060	W	14620	19000
			X	19000	24710

Notes:

1. Flux is an accuracy of $\pm 10\%$ respectively.
2. LED is an ever changing technology. Please refer to the datasheets for the final specifications.

Cool White, Neutral White and Warm White X, Y Groups

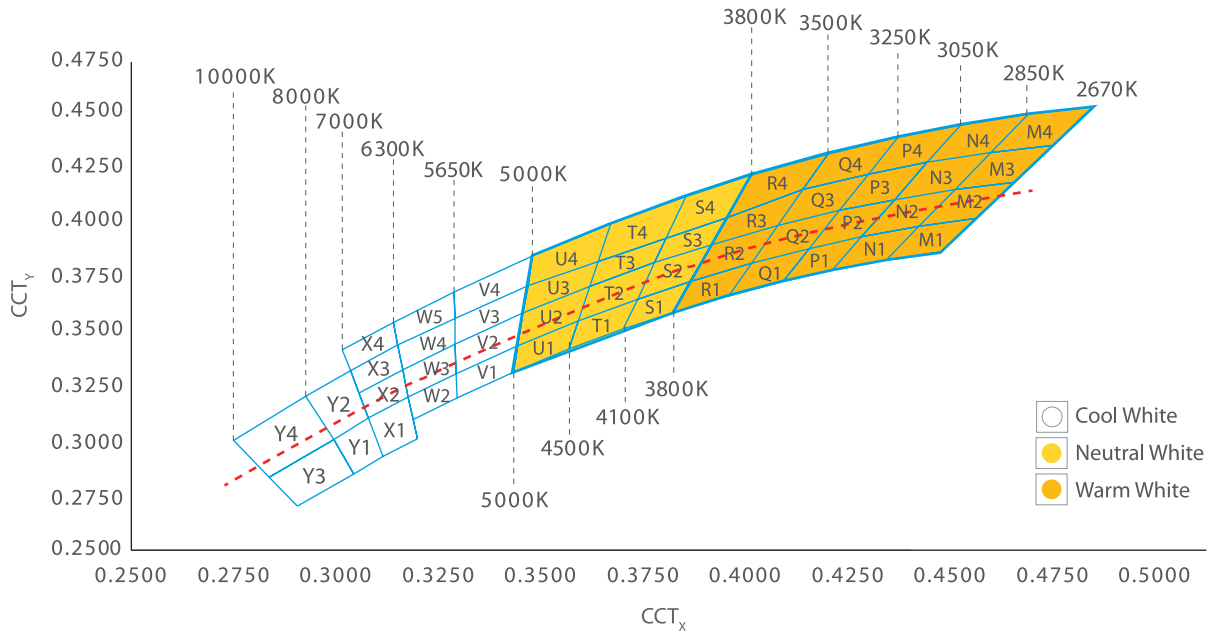


Figure 13. EdiLine IV series CIE chromaticity diagram

Table 7. EdiLine IV series color bin group

Group/ CCT (Typ.)	XY	Group/ CCT (Typ.)	XY	Group/ CCT (Typ.)	XY	Group/ CCT (Typ.)	XY
M1	0.4436 0.3991	N1	0.4293 0.3942	P1	0.4221 0.3789	Q1	0.4021 0.3821
2,700K	0.4489 0.3875	2,900K	0.4355 0.3837	3,150K	0.4100 0.3738	3,300K	0.4100 0.3738
	0.4355 0.3837		0.4221 0.3789		0.4164 0.3890		0.3965 0.3672
M2	0.4525 0.4162	N2	0.4375 0.4116	P2	0.4239 0.4064	Q2	0.4085 0.3995
2,700K	0.4671 0.4196	2,900K	0.4293 0.3942	3,150K	0.4375 0.4116	3,300K	0.4239 0.4064
	0.4576 0.4028		0.4436 0.3991		0.4293 0.3942		0.4164 0.3890
	0.4436 0.3991		0.4525 0.4162		0.4164 0.3890		0.4021 0.3821
M3	0.4614 0.4333	N3	0.4614 0.4333	P3	0.4311 0.4233	Q3	0.4085 0.3995
2,700K	0.4767 0.4366	2,900K	0.4525 0.4162	3,150K	0.4456 0.4286	3,300K	0.4147 0.4161
	0.4671 0.4196		0.4375 0.4116		0.4375 0.4116		0.4311 0.4233
	0.4525 0.4162		0.4456 0.4286		0.4239 0.4064		0.4239 0.4064
M4	0.4705 0.4508	N4	0.4538 0.4459	P4	0.4384 0.4404	Q4	0.4384 0.4404
2,700K	0.4866 0.4541	2,900K	0.4705 0.4508	3,150K	0.4538 0.4459	3,300K	0.4311 0.4233
	0.4767 0.4366		0.4614 0.4333		0.4456 0.4286		0.4147 0.4161
	0.4614 0.4333		0.4456 0.4286		0.4311 0.4233		0.4209 0.4326



Lighting Design Manufacturing Service

Group/ CCT (Typ.)	X	Y	Group/ CCT (Typ.)	X	Y	Group/ CCT (Typ.)	X	Y	Group/ CCT (Typ.)	X	Y
R1	0.3870	0.3739	T1	0.3594	0.3556	V1	0.3292	0.3313	X1	0.3075	0.3107
3,650K	0.4021	0.3821	4,300K	0.3570	0.3425	5,300K	0.3444	0.3442	6,650K	0.3174	0.3204
	0.3965	0.3672		0.3705	0.3519		0.3433	0.3320		0.3196	0.3013
	0.3826	0.3595		0.3740	0.3658		0.3293	0.3200		0.3111	0.2931
R2	0.3923	0.3909	T2	0.3622	0.3716	V2	0.3292	0.3313	X2	0.3075	0.3107
3,650K	0.3870	0.3739	4,300K	0.3782	0.3824	5,300K	0.3290	0.3450	6,650K	0.3051	0.3223
	0.4021	0.3821		0.3740	0.3658		0.3457	0.3591		0.3160	0.3332
	0.40859	0.3995		0.3594	0.3556		0.3444	0.3442		0.3174	0.3204
R3	0.40859	0.3995	T3	0.3642	0.3828	V3	0.3290	0.3450	X3	0.3051	0.3223
3,650K	0.39237	0.3909	4,300K	0.3811	0.3937	5,300K	0.3288	0.3569	6,650K	0.3030	0.3327
	0.39628	0.4035		0.3782	0.3824		0.3469	0.3717		0.3147	0.3444
	0.41478	0.4161		0.3622	0.3716		0.3457	0.3591		0.3160	0.3332
R4	0.40227	0.4227	T4	0.3672	0.4002	V4	0.3288	0.3569	X4	0.3030	0.3327
3,650K	0.42094	0.4326	4,300K	0.3859	0.4129	5,300K	0.3286	0.3689	6,650K	0.3010	0.3422
	0.41478	0.4161		0.3811	0.3937		0.3481	0.3856		0.3136	0.3549
	0.39628	0.4035		0.3642	0.3828		0.3469	0.3717		0.3147	0.3444
S1	0.3470	0.3658	U1	0.3444	0.3442	W2	0.3292	0.3313	Y1	0.3040	0.2850
3,900K	0.3870	0.3738	4,750K	0.3433	0.3320	6,000K	0.3293	0.3202	7,500K	0.2990	0.3010
	0.3825	0.3595		0.3570	0.3425		0.3186	0.3102		0.3075	0.3107
	0.3705	0.3519		0.3594	0.3556		0.3174	0.3204		0.3111	0.2931
S2	0.3782	0.3824	U2	0.3622	0.3716	W3	0.3290	0.3450	Y2	0.2990	0.3010
3,900K	0.3923	0.3909	4,750K	0.3594	0.3556	6,000K	0.3292	0.3313	7,500K	0.2920	0.3210
	0.3870	0.3738		0.3444	0.3442		0.3174	0.3204		0.3030	0.3327
	0.3740	0.3658		0.3457	0.3591		0.3160	0.3332		0.3075	0.3107
S3	0.3782	0.3824	U3	0.3642	0.3828	W4	0.3290	0.3450	Y3	0.3040	0.2850
3,900K	0.3811	0.3937	4,750K	0.3622	0.3716	6,000K	0.3160	0.3332	9,000K	0.2899	0.2703
	0.3962	0.4035		0.3457	0.3591		0.3147	0.3444		0.2829	0.2837
	0.3923	0.3909		0.3469	0.3717		0.3288	0.3569		0.2990	0.3010
S4	0.3859	0.4129	U4	0.3642	0.3828	W5	0.3147	0.3444	Y4	0.2920	0.3210
3,900K	0.4022	0.4227	4,750K	0.3672	0.4002	6,000K	0.3136	0.3549	9,000K	0.2742	0.3006
	0.3962	0.4035		0.3481	0.3856		0.3186	0.3689		0.2829	0.2837
	0.3811	0.3937		0.3469	0.3717		0.3288	0.3569		0.2990	0.3010

Packaging Information

Tray Packing for 3W 6W or 10W

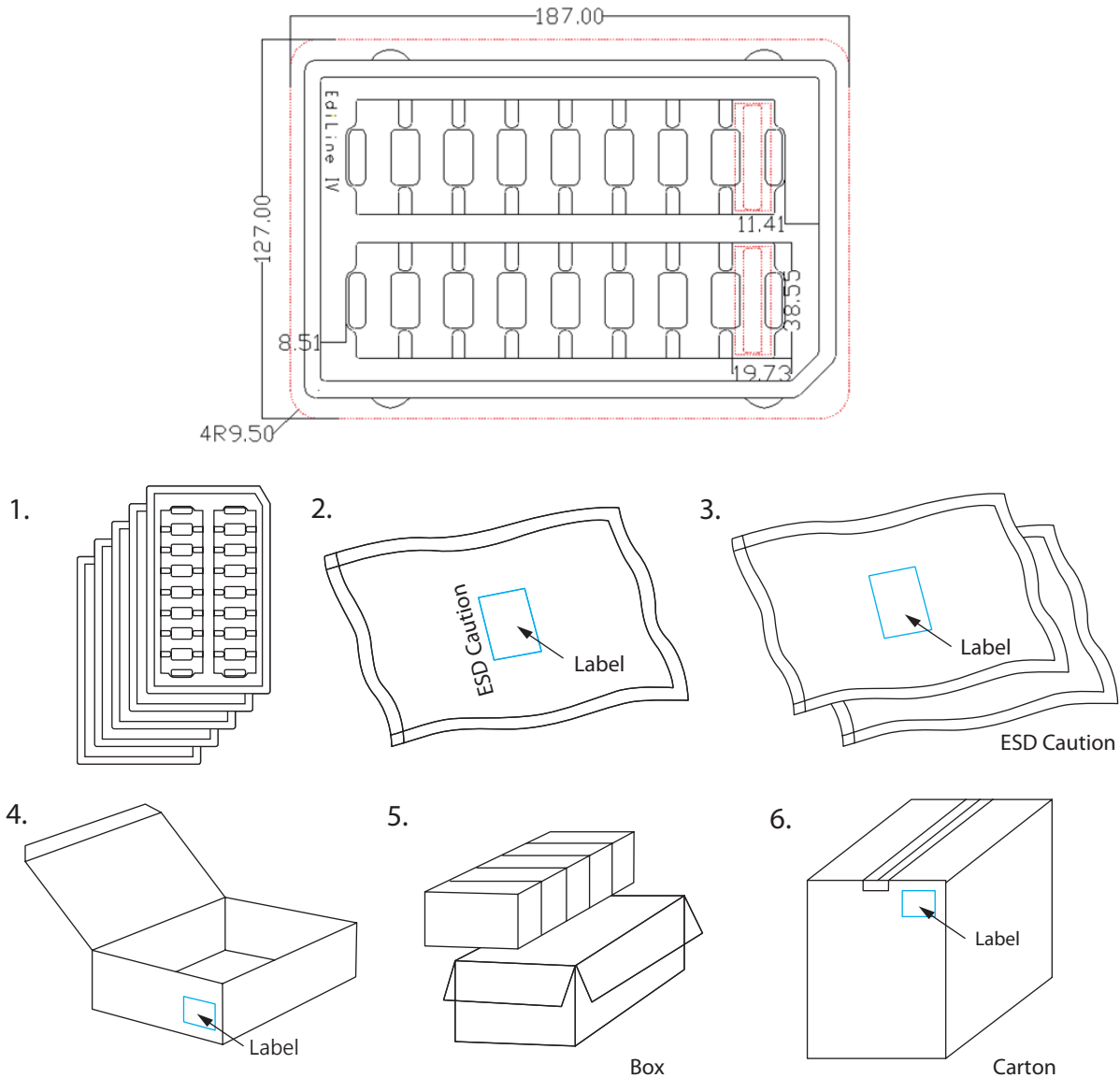


Figure 14. Packaging steps

Notes:

1. All dimensions are in mm.
2. There are 3W 16pcs or 6W 16pcs or 10W 16pcs emitters in a full tray.
3. There are 11 trays in a bag.
4. There are 2 bags in a box.
5. There are 10 boxes in an carton.
6. A bag contains one humidity indicator card and drying agent.



Lighting Design Manufacturing Service

Revision History

Table 8. Revision history of EdiLine IV series datasheet

Version	Description	Release Date
2	1. Update the layout of datasheet 2. Update the bin group	2011.08.15

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©2011 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