

High Power Solid-State LED Light Source

LUSTRON DX3

Introduction

For a brighter solid-state light source, Lustrous Technology is proud to release the new **LUSTRON DX3**. Ideal for your high lumen output design, the **LUSTRON DX3** has the ability to generate extremely high lumen output from 1,000 to 2,000 on one single LED product. The **LUSTRON DX3** is energy efficient, and provides high efficiency while performing its high lumen for all types of Commercial and Architectural applications. A 20-watt driver is all you need to start the high lumen engine for your next bright design.

*Note1: To optimize product performance and lifetime, constant DC at indicated forward current and T_b less than 50°C should be applied.

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LUSTRON DX3 Part Number Matrix

Table.1

Color	P/N
Warm White	L320CLHWBA
Neutral White	L320MWHWCA
Cool White	L320NWHWDA

LUSTRON DX3 Material

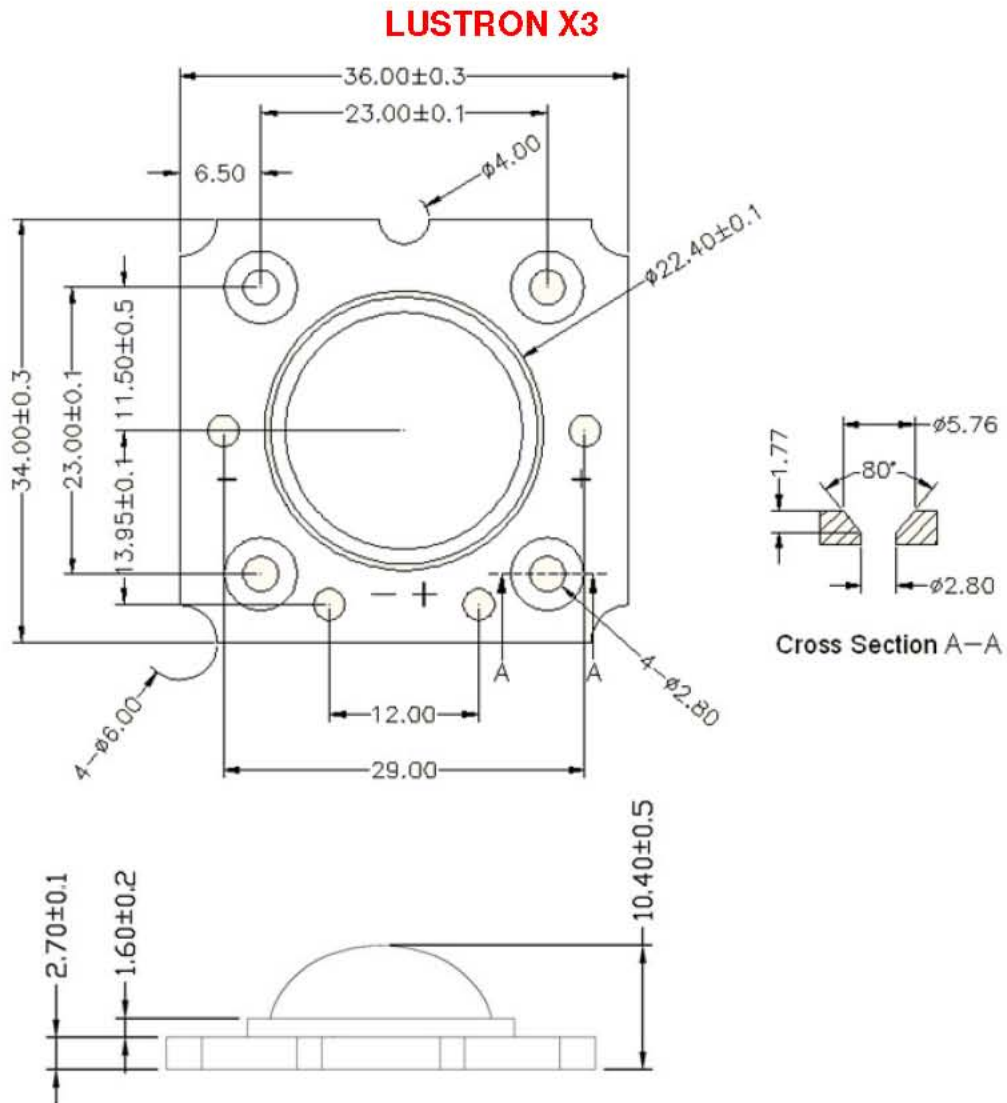
Chip Material	GaN Base
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LUSTRON DX3 Chips Array

16 Chips Array

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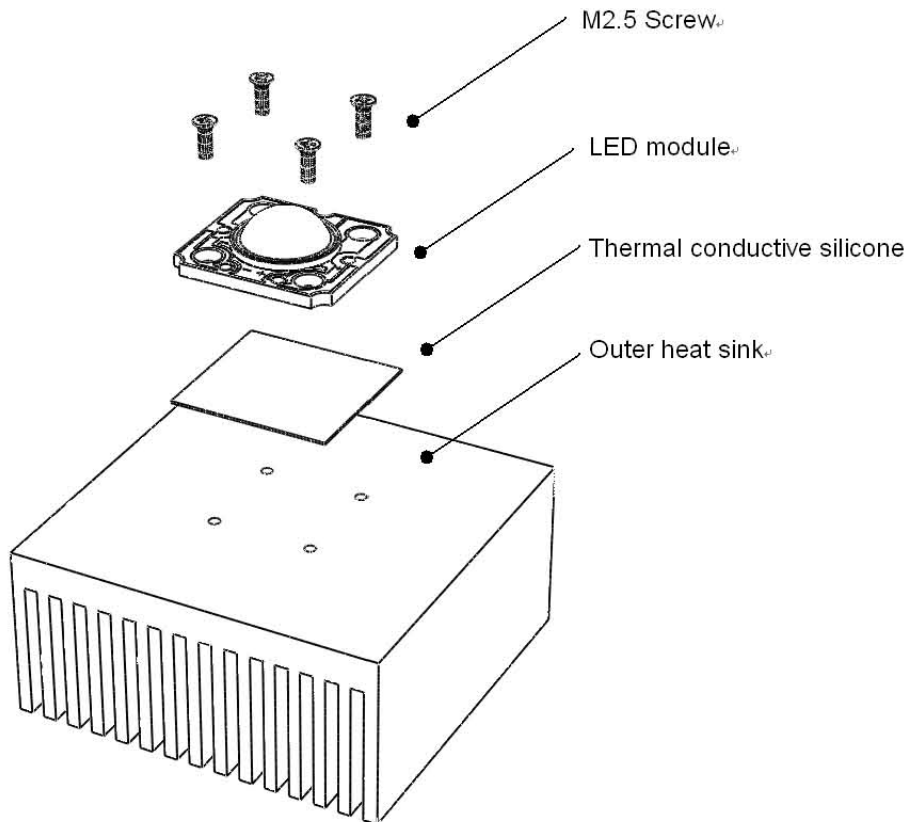
Mechanical Dimensions



Note1: Drawing not to scale. All dimensions are in millimeters.

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Recommended installation screw pitch



Warning:

Do not touch the lighting area during handling and assembling.

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Flux Characteristics at 750 mA, Junction Temperature Tj = 25°C

Table.2

Color	Luminous flux (lm)		
	Minimum	Typical	Maximum
Warm White (2700K)	860 lm	1000 lm	1100 lm
Neutral White (4000K)	1100 lm	1350 lm	1600 lm
Cool White (5700K)	1300 lm	1600 lm	2000 lm

Note1: Luminous flux is measured in total power with tolerable errors of 5%. Minimum luminous flux performance guaranteed within published operating conditions.

Note2: Higher luminous flux will become available in the near future.

Optical Characteristics

Table.3

Color	λ_d (nm) or CCT(K)			Viewing Angle (degrees)	CRI
	Min	Typ	Max		
Warm White	2500K	2700K	3250K	~140	85
Neutral White	3250K	4000K	4750K		75
Cool White	4750K	6000K	10000K		65

Note1: CRI value is measured with tolerable errors of 5%.

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Electrical Characteristics

Table.4

Color	Forward Voltage (V) for 750 mA forward current		
	Min	Typ	Max
Warm White			
Neutral White	24.8	26.4	28.8
Cool White			

Note1: Lustrous Technology allows a tolerance of each LED for voltage measurements.

Note2: Measurements are taken under each nominal forward current.

Absolute Maximum Ratings

Table.5

Parameters	For 1050mA forward current	
	Warm White/ Cool White	
Advised DC Forward Current (mA)	750	
Max. DC Forward Current (mA)	1000	
LED Junction Temperature (°C)	110	
ESD Sensitivity	+/- 4kV (HBM)	
Thermal Resistance (°C/W)	~0.5	
Operating Temperature (°C)	-20 ~ +80	
Storage Temperature (°C)	-20 ~ +50	
Soldering Temperature (°C)	260 (duration should be less than 5 seconds)	

Note1: Proper current operating must be observed to maintain junction temperature below the maximum.

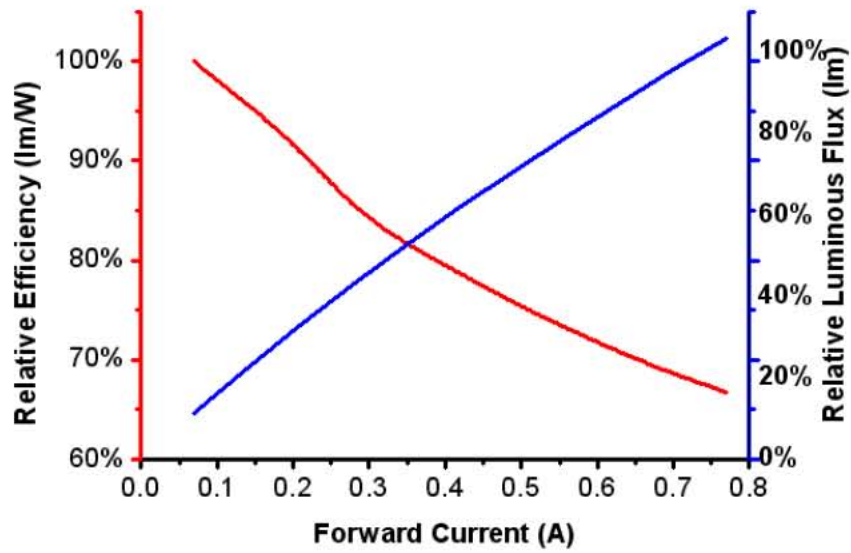
Note2: If customers want to drive the LED at maximum DC current in the luminaire, thermal solution should be considered more serious.

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Relative Intensity vs. Current (T_j = 25°C)



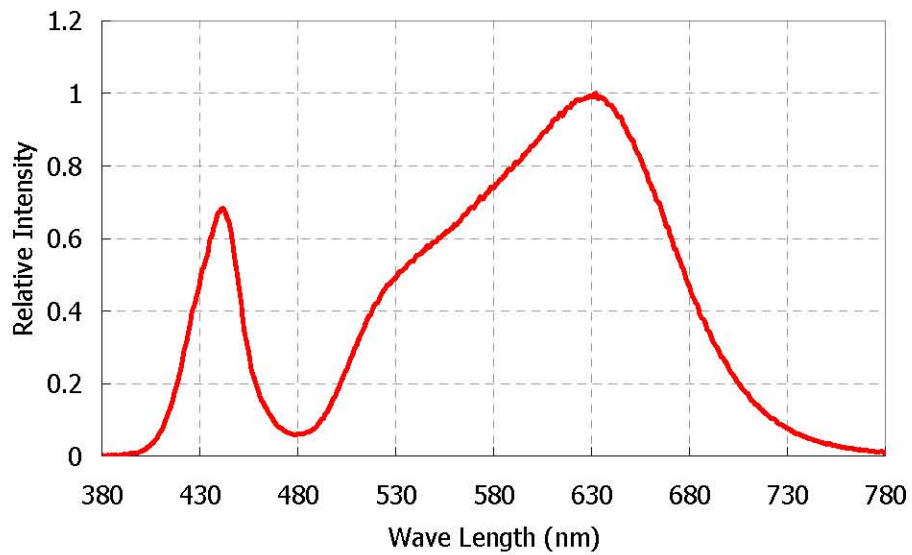
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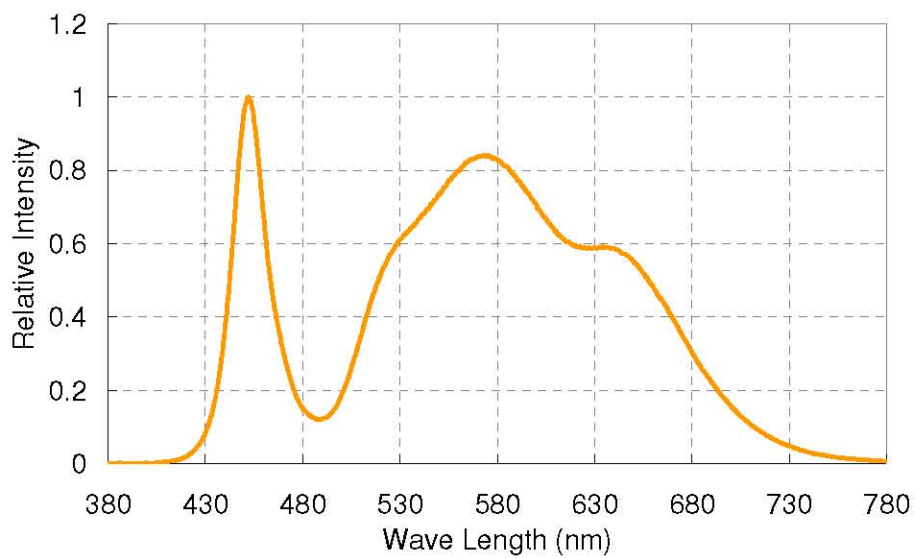
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Relative Spectral Power

Warm White (3000K)

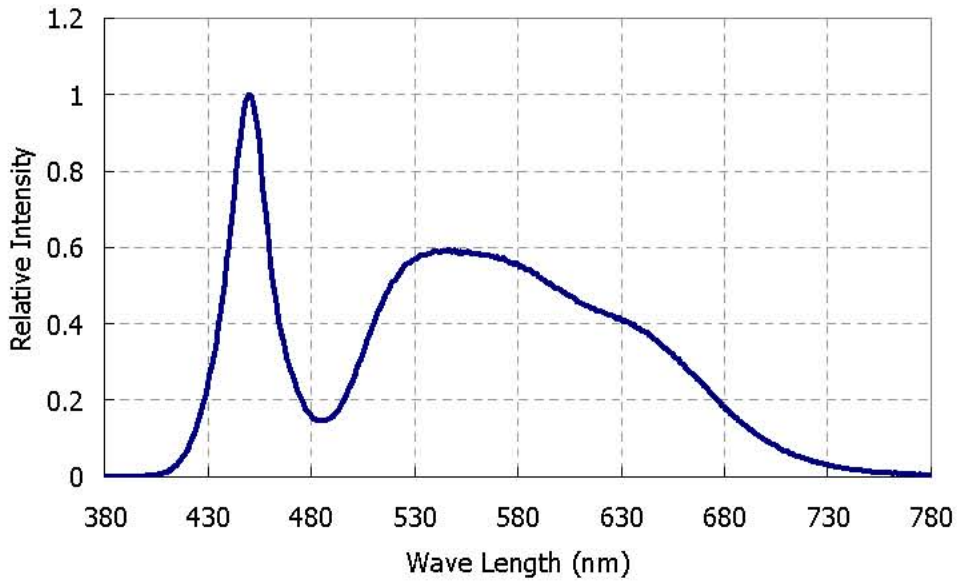


Neutral White (4000K)

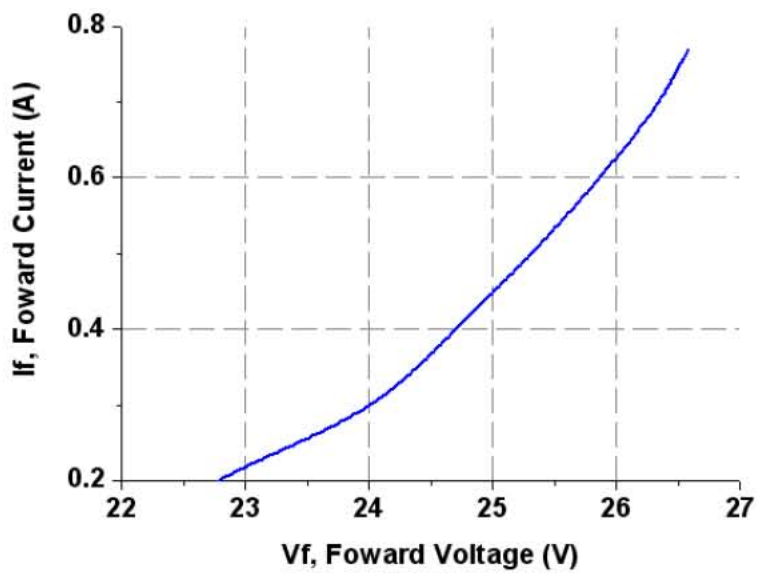


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Cool White (5700K)

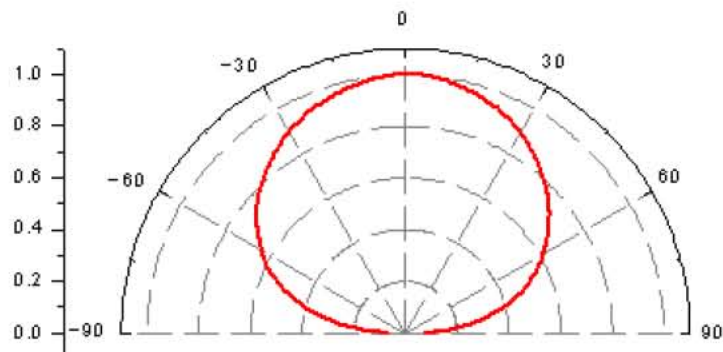


Forward Voltage vs. Current ($T_j = 25^\circ\text{C}$)

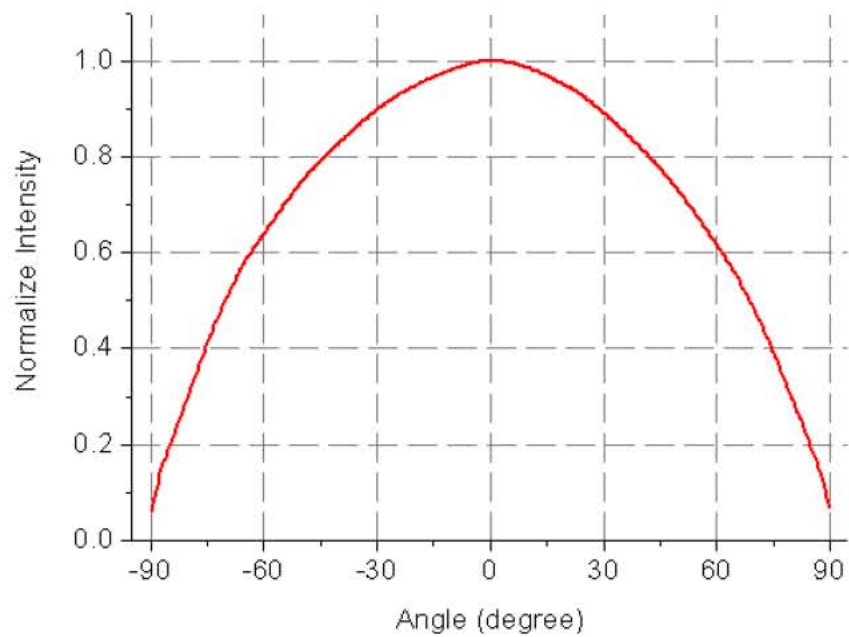


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Typical Angular Beam Profile, $T_j=25^{\circ}\text{C}$ *



View Angle: 140 degree



* Note1 : Detail beam profile data can be provided to certain qualified customers

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Product Binning

Typical manufacturing processes of LED result in a variation in performance surrounding the typical data sheet values. In order to minimize variation in the end product of application, Lustrous bins its products for performance in luminous flux and chromaticity.

The tables below list the standard photometric bins for Lustrous LED (tested and binned at the indicated test current). **Product availability in a particular bin varies by product and production run. Please contact your Lustrous sales representative for further information regarding product availability.**

Binning Condition

Table.6

Color	Forward Current (mA)
Warm White	
Neutral White	750
Cool White	

Luminous Flux Binning Information *

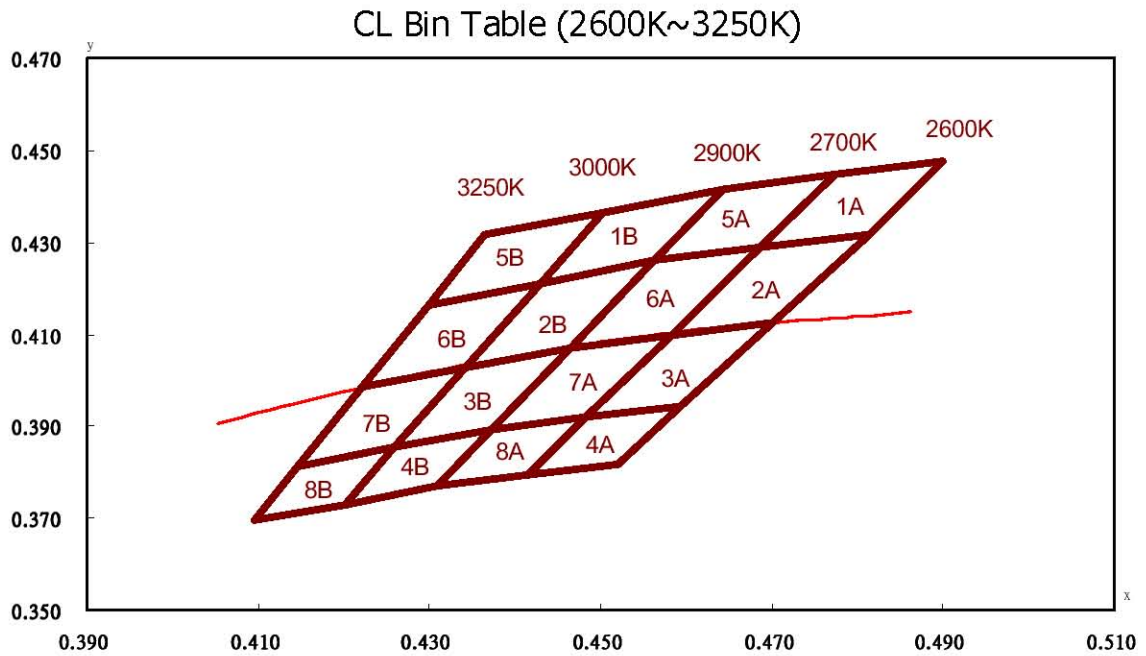
Table.7

BIN Code	Lv (lm)	
	min.	max.
A	5	20
B	20	40
C	40	60
D	60	80
E	80	110
F	110	140
G	140	170
H	170	200
I	200	240
J	240	280
K	280	320
L	320	360

BIN Code	Lv (lm)	
	min.	max.
M	360	400
N	400	450
O	450	500
P	500	580
Q	580	660
R	660	740
S	740	860
T	860	980
U	980	1100
V	1100	1300
W	1300	1600
X	1600	2000

*Note: Luminous flux is measured in total power with tolerable errors of 10%.

Chromaticity Binning Information **
Warm White



**Note1: Chromaticity is measured in Chromaticity Coordinate (CIE 1931-xy) with tolerable errors of +/-0.005.

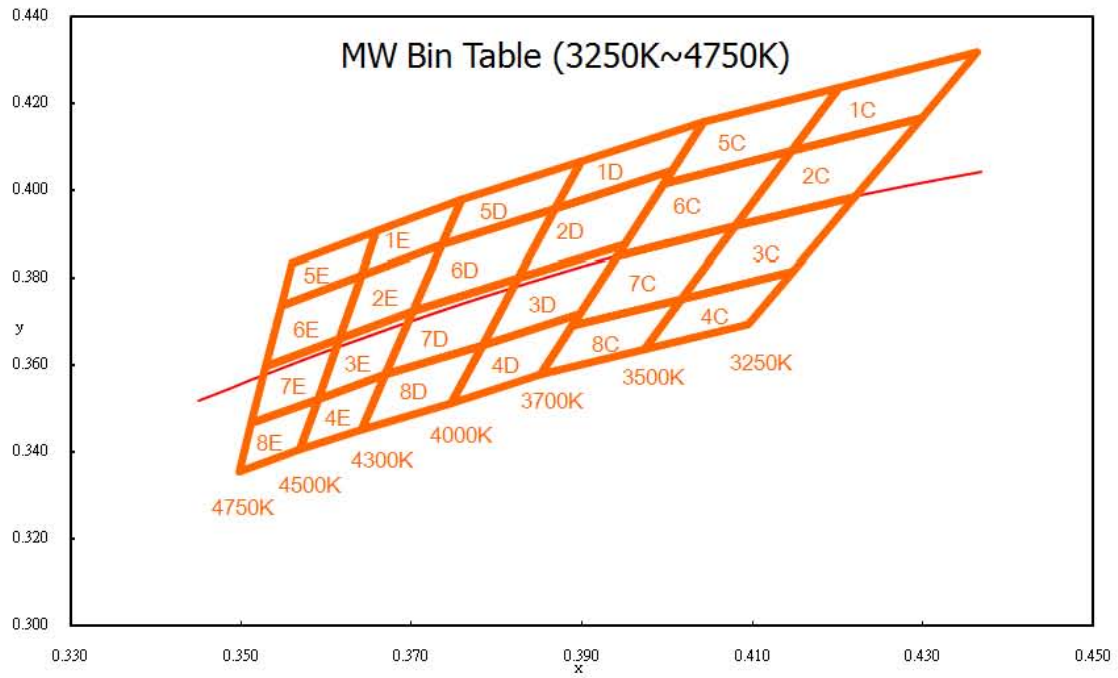
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Table.8

Warm-White Bin Coordinates												
CCT (K)			BIN CODE	Chromaticity Coordinate (CIE 1931-xy)								
Min	Typ.	Max		x1	y1	x2	y2	x3	y3	x4	y4	
2600	2700	2900	A	1A	0.4687	0.4289	0.4774	0.4447	0.4900	0.4477	0.4813	0.4319
				2A	0.4582	0.4099	0.4687	0.4289	0.4813	0.4319	0.4700	0.4126
				3A	0.4483	0.3919	0.4582	0.4099	0.4700	0.4126	0.4593	0.3944
				4A	0.4414	0.3794	0.4483	0.3919	0.4593	0.3944	0.4519	0.3818
				5A	0.4562	0.4260	0.4642	0.4416	0.4774	0.4447	0.4687	0.4289
				6A	0.4465	0.4071	0.4562	0.4260	0.4687	0.4289	0.4582	0.4099
				7A	0.4373	0.3893	0.4465	0.4071	0.4582	0.4099	0.4483	0.3919
				8A	0.4309	0.3769	0.4373	0.3893	0.4483	0.3919	0.4414	0.3794
2900	3000	3250	B	1B	0.4430	0.4212	0.4503	0.4366	0.4642	0.4416	0.4562	0.4260
				2B	0.4342	0.4028	0.4430	0.4212	0.4562	0.4260	0.4465	0.4071
				3B	0.4259	0.3853	0.4342	0.4028	0.4465	0.4071	0.4373	0.3893
				4B	0.4201	0.3731	0.4259	0.3853	0.4373	0.3893	0.4309	0.3769
				5B	0.4299	0.4165	0.4364	0.4316	0.4503	0.4366	0.4430	0.4212
				6B	0.4221	0.3984	0.4299	0.4165	0.4430	0.4212	0.4342	0.4028
				7B	0.4147	0.3814	0.4221	0.3984	0.4342	0.4028	0.4259	0.3853
				8B	0.4095	0.3694	0.4147	0.3814	0.4259	0.3853	0.4201	0.3731

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Neutral White



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Table.9

Natural White Bin Table												
CCT (K)			BIN CODE	Chromaticity Coordinate (CIE 1931-xy)								
Min	Typ.	Max		x1	y1	x2	y2	x3	y3	x4	y4	
3250	3500	3700	C	1C	0.4146	0.4089	0.4202	0.4235	0.4364	0.4316	0.4299	0.4165
				2C	0.4080	0.3916	0.4146	0.4089	0.4299	0.4165	0.4221	0.3984
				3C	0.4017	0.3751	0.4080	0.3916	0.4221	0.3984	0.4147	0.3814
				4C	0.3973	0.3635	0.4017	0.3751	0.4147	0.3814	0.4095	0.3694
				5C	0.3996	0.4015	0.4043	0.4157	0.4202	0.4235	0.4146	0.4089
				6C	0.3941	0.3848	0.3996	0.4015	0.4146	0.4089	0.4080	0.3916
				7C	0.3889	0.3690	0.3941	0.3848	0.4080	0.3916	0.4017	0.3751
				8C	0.3852	0.3578	0.3889	0.3690	0.4017	0.3751	0.3973	0.3635
3700	4000	4300	D	1D	0.3869	0.3958	0.3899	0.4066	0.4043	0.4157	0.4006	0.4044
				2D	0.3825	0.3798	0.3869	0.3958	0.4006	0.4044	0.3950	0.3875
				3D	0.3783	0.3646	0.3825	0.3798	0.3950	0.3875	0.3898	0.3716
				4D	0.3746	0.3513	0.3783	0.3646	0.3898	0.3716	0.3852	0.3578
				5D	0.3736	0.3874	0.3759	0.3978	0.3899	0.4066	0.3869	0.3958
				6D	0.3702	0.3722	0.3736	0.3874	0.3869	0.3958	0.3825	0.3798
				7D	0.3670	0.3578	0.3702	0.3722	0.3825	0.3798	0.3783	0.3646
				8D	0.3642	0.3450	0.3670	0.3578	0.3783	0.3646	0.3746	0.3513
4300	4500	4750	E	1E	0.3641	0.3804	0.3659	0.3904	0.3759	0.3978	0.3736	0.3874
				2E	0.3615	0.3659	0.3641	0.3804	0.3736	0.3874	0.3702	0.3722
				3E	0.3590	0.3521	0.3615	0.3659	0.3702	0.3722	0.3670	0.3578
				4E	0.3569	0.3407	0.3590	0.3521	0.3670	0.3578	0.3642	0.3450
				5E	0.3548	0.3736	0.3560	0.3832	0.3659	0.3904	0.3641	0.3804

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				6E	0.3529	0.3597	0.3548	0.3736	0.3641	0.3804	0.3615	0.3659
				7E	0.3512	0.3465	0.3529	0.3597	0.3615	0.3659	0.3590	0.3521
				8E	0.3498	0.3355	0.3512	0.3465	0.3590	0.3521	0.3569	0.3407

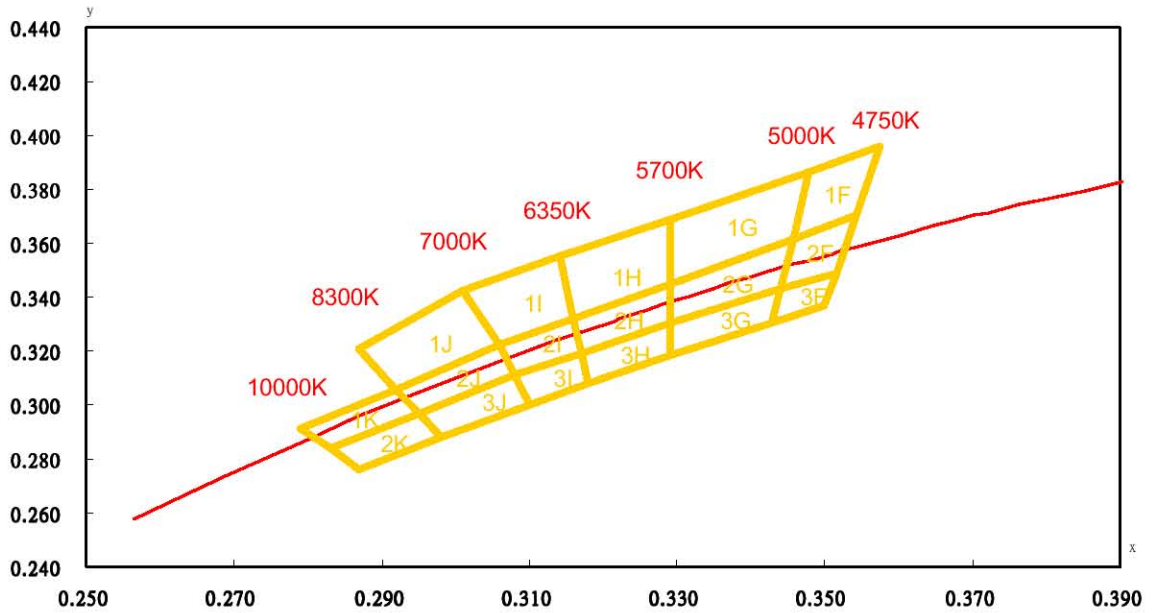
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Cool White

NW Bin Table (4750K~10000K)



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Table.10

Cool White Bin Table												
CCT (K)			BIN CODE	Chromaticity Coordinate (CIE 1931-xy)								
Min	Typ.	Max		x1	y1	x2	y2	x3	y3	x4	y4	
4750	4850	5000	F	1F	0.3479	0.3867	0.3457	0.3617	0.3544	0.3704	0.3576	0.3957
				2F	0.3457	0.3617	0.3440	0.3429	0.3515	0.3487	0.3544	0.3704
				3F	0.3440	0.3429	0.3429	0.3307	0.3500	0.3371	0.3515	0.3487
5000	5300	5700	G	1G	0.3290	0.3690	0.3290	0.3450	0.3457	0.3617	0.3479	0.3867
				2G	0.3457	0.3617	0.3440	0.3429	0.3290	0.3300	0.3290	0.3450
				3G	0.3290	0.3300	0.3290	0.3180	0.3429	0.3307	0.3440	0.3429
5700	6000	6350	H	1H	0.3290	0.3690	0.3290	0.3450	0.3160	0.3320	0.3140	0.3550
				2H	0.3290	0.3450	0.3290	0.3300	0.3170	0.3190	0.3160	0.3320
				3H	0.3170	0.3190	0.3290	0.3300	0.3290	0.3180	0.3180	0.3080
6350	6500	7000	I	1I	0.3140	0.3550	0.3160	0.3320	0.3060	0.3220	0.3010	0.3420
				2I	0.3160	0.3320	0.3170	0.3190	0.3080	0.3110	0.3060	0.3220
				3I	0.3080	0.3110	0.3170	0.3190	0.3180	0.3080	0.3100	0.3000
7000	7650	8300	J	1J	0.3010	0.3420	0.3060	0.3220	0.2920	0.3060	0.2870	0.3210
				2J	0.3060	0.3220	0.3080	0.3110	0.2950	0.2970	0.2920	0.3060
				3J	0.2950	0.2970	0.3080	0.3110	0.3100	0.3000	0.2980	0.2880
8300	9000	10000	K	1K	0.2920	0.3060	0.2950	0.2970	0.2830	0.2840	0.2790	0.2910
				2K	0.2830	0.2840	0.2950	0.2970	0.2980	0.2880	0.2870	0.2760

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Print Code Guideline

L3 20 NW H W D A
 1 2 3 4 5 6 7

XXXXXXXXXXXXXXXXXX

8

V0 -W -2H XX XX XX
 9 10 11 12 13 14

Table.11

1 Type	2 Power	3 Color	4 Vf	5 Current	6 CRI
L3	20 : 20W	NW : Cool White MW : Neutral White CL : Warm White	G : 24.5 V H : 28 V I : 31.5 V	W : 750 mA	B : 80~90 C : 70~80 D : 60~70

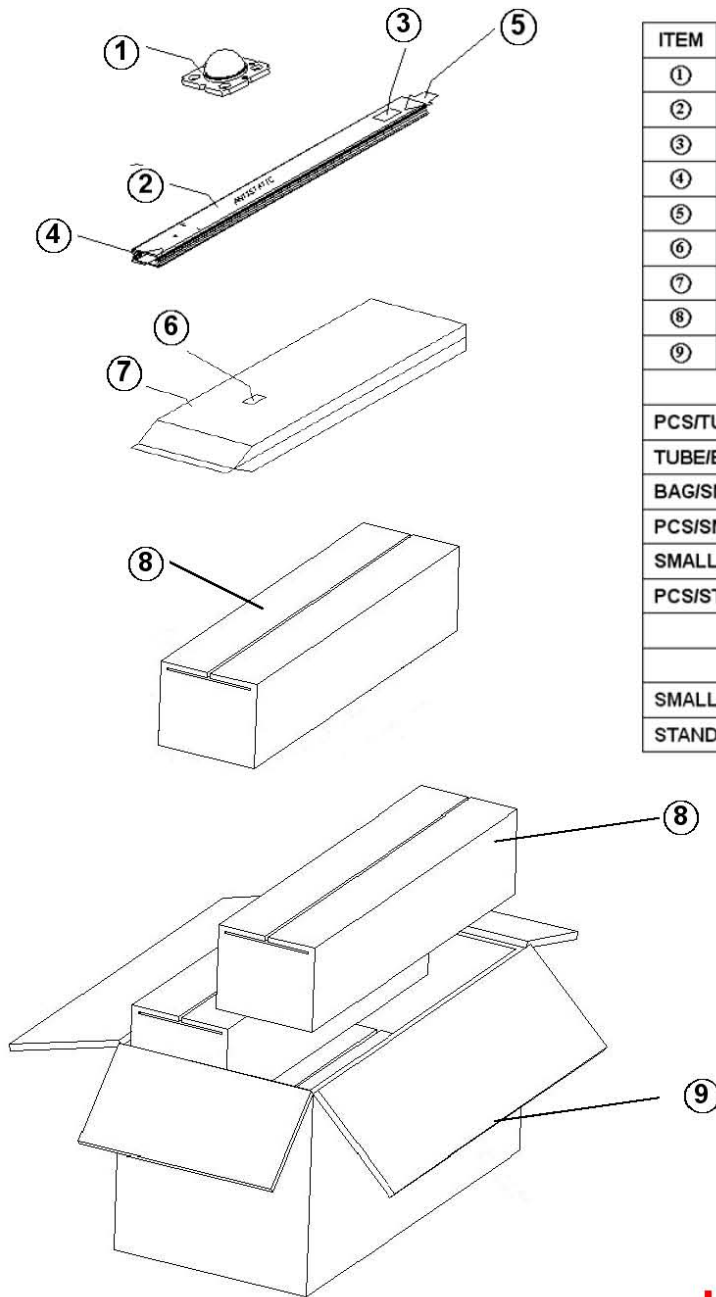
7 Customer Code	8 Internal Code	9 Bin Vf	10 Luminous Flux	11 Chromaticity
		V0 : Without Binned	See Bin Code Definition	See Bin Code Definition

12 Year	13 Month	14 Week
09 : 2009	01 : January	01 : 01 st Week
10 : 2010	05 : May	20 : 20 th Week
11 : 2011	10 : October	45 : 45 th Week

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Standard Packaging



ITEM	DESCRIPTION	
①	LED	
②	PLASTIC TUBE	
③	ADHESIVE MAIN LABEL	
④	END-PLUG WHITE	
⑤	END-PLUG BLACK	
⑥	ADHESIVE MAIN LABEL	
⑦	MOISTURE BARRIER BAG	
⑧	SMALL BOX	
⑨	STANDARD BOX	
STACKING METHOD		
PCS/TUBE		10
TUBE/BAG		10
BAG/SMALL BOX		2
PCS/SMALL BOX		200
SMALL BOX/STANDARD BOX		4
PCS/STANDARD BOX		800
SIZE AND WEIGHT		
	SIZE(mm ³)	WEIGHT(kg)
SMALL BOX	560x130x130	3.7±0.5
STANDARD BOX	580x280x280	15.5±0.5

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Precaution for Use

Over-current Proof

1. Customer must not drive the LEDs with reverse current and should apply resistors for extra protection.
2. The maximum overshoot of driving current should be limited under normal driving current * 1.3 times.
3. The ripple of driving current should not over +/-10% of normal driving current.
4. The typical driving current for this series is 750 mA.
5. When driving the products, the clamp voltage must be set at 26.4 V in driver.

Storage

1. Do not open the moisture barrier bag (MBB) before the products are ready to be used.
2. Storage Condition (before opening the MBB) :
 - Storage Temperature: -20~50 °C.
 - Relative Humidity: <60% RH.
 - Please re-seal the MBB when storing longer than 3 weeks.
 - The products should be used within half of a year.
3. Storage Condition (after opening the MBB) :
 - Storage Temperature: -20~50 °C.
 - Relative Humidity: <60% RH.
 - The products should be used (assembled) as soon as possible after opening the MBB. Otherwise, LED must be baked at 80+/-5°C, 24 hours before handling and assembling.

Handling

1. Do not touch the lighting area during handling and assembling.