LUSTROUS®

GREEN TECHNOLOGY OF LIGHTINGS

Technical Datasheet LS45

High Power Solid-State LED Light Source

LUSTRON V3

Introduction

For a brighter solid-state light source, Lustrous Technology is proud to release the new **LUSTRON V3**. Ideal for your high concentration in spotlight, **LUSTRON V3** has a smaller active area which is much easier for secondary optics design and installation. The **LUSTRON V3** is energy efficient and specifically designed for MR16, PAR20, or other similar focused LED lighting applications. **LUSTRON V3** is also commonly used for other types of Commercial and Architectural applications.

Note: To optimize the performance and lifetime, please maintain a constant current of less than the indicated Tb at 50° C.

LUSTRON V3 Part Number Matrix

Table.1

Color		P/N
Warm White	（2700K）	L305CLBLCA
Neutral White	（4000K）	L305MWBLCA
Cool White	（5700K）	L305NWBLCA

LUSTRON V3 Material

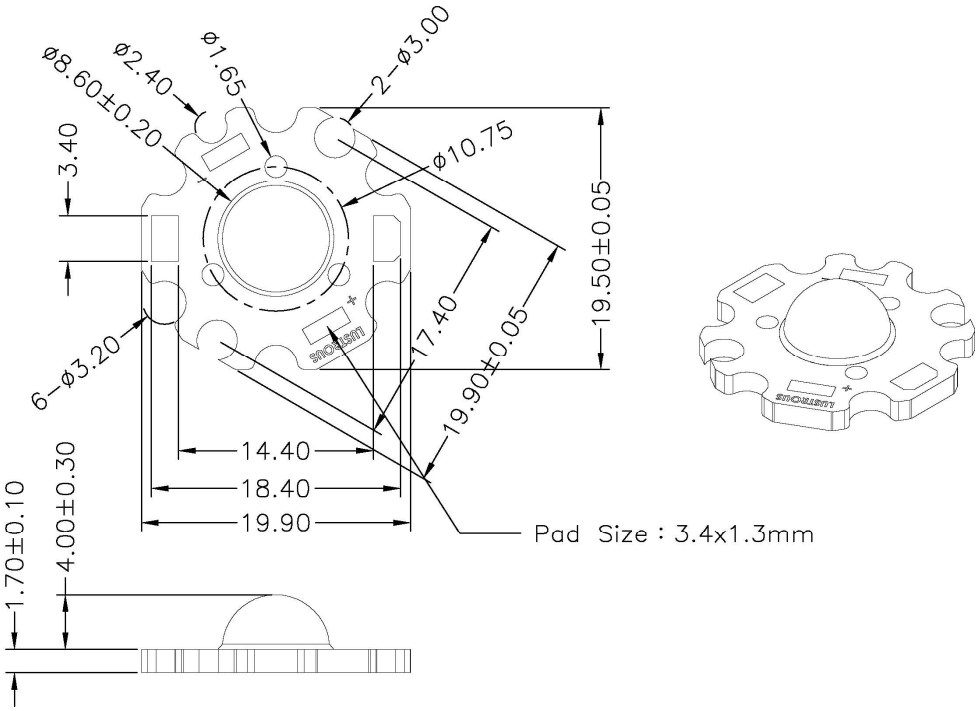
Chip Material	GaN Base

LUSTRON V3 Chips Array

4 Chips Array

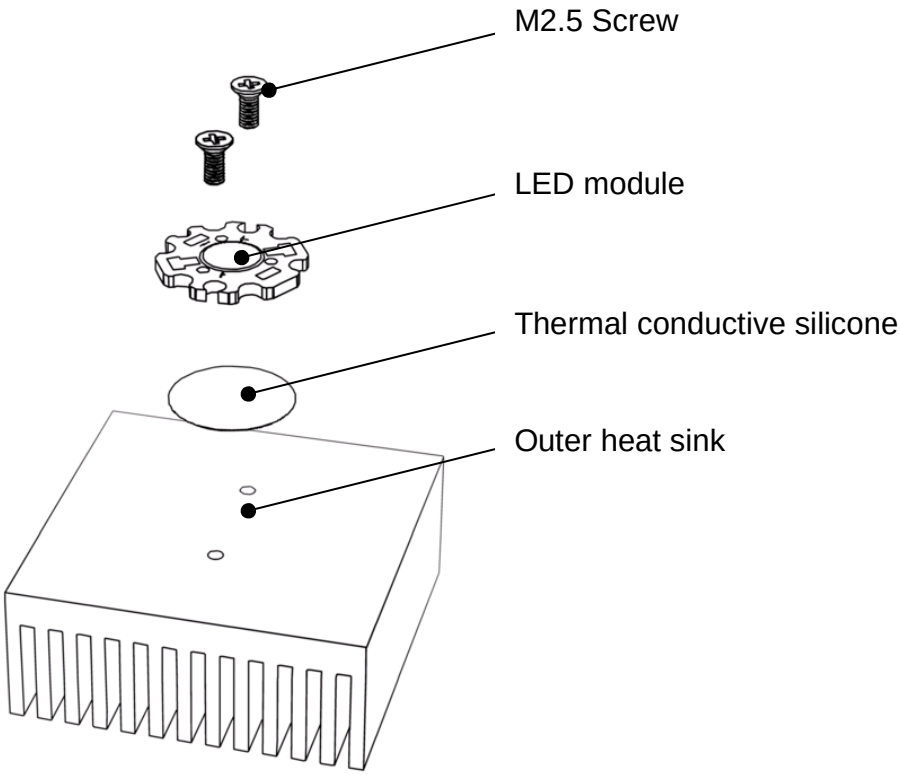
Mechanical Dimensions

LUSTRON V3



Note: These drawings are not for scale. All dimensions are in millimeters.

Recommended installation screw pitch



Warning:

Do not touch the lighting surface area during installation.

Flux Characteristics at 700mA, Junction Temperature Tj = 25^0C

Table.2

Color	Minimum Luminous Flux（lm）	Typical Luminous Flux（lm）
Warm White （2700K）	200 lm	250 lm
Neutral White （4000K）	280 lm	320 lm
Cool White （5700K）	320 lm	350 lm

Note1: Luminous flux is measured in total power with a tolerance rate of +/- 10%. Minimum luminous flux performance is guaranteed from the above data.

Note2: Higher luminous flux will be available in the future.

Optical Characteristics

Table.3

Color	λ_d （nm）or CCT（K）			Viewing Angle （degrees）	CRI
	Min	Typ	Max		
Warm White	2500K	2700K	3250K	~125	75
Neutral White	3250K	4000K	4750K		
Cool White	4750K	5700K	10000K		

Note: CRI value is measure with a tolerance rate of +/- 10%.

Electrical Characteristics

Table.4

Color	Forward Voltage （V） for 700mA forward current		
	Min	Typ	Max
Warm White	6.2	7.0	7.2
Neutral White			
Cool White			

Note1: Lustrous Technology allows a tolerance rate of +/- 10% for Lustrous products voltage measurement.

Note2: All figures are measured from the above forward current at 700mA.

Absolute Maximum Ratings

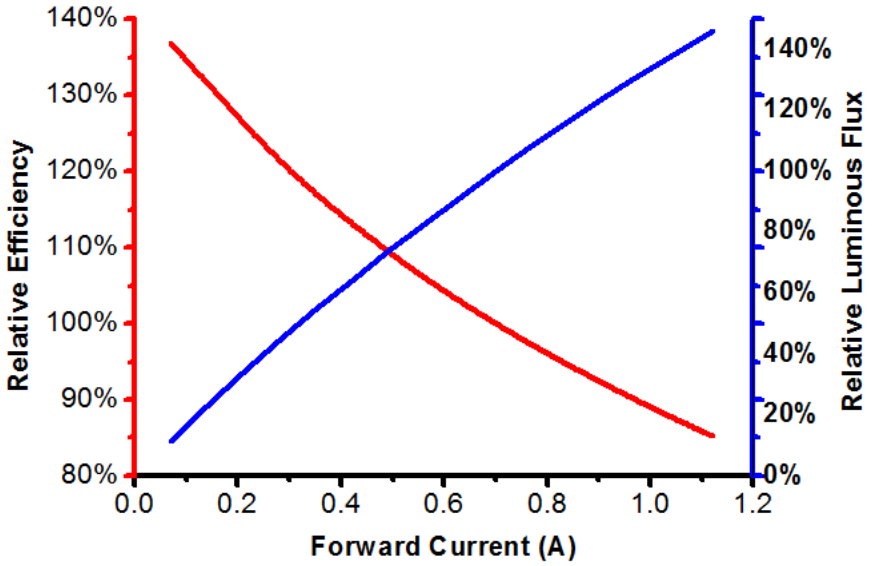
Table.5

Parameters	For 700mA forward current
	Warm White/ Neutral White/ Cool White
Advised DC Forward Current （mA）	700
Max. DC Forward Current （mA）	1200
LED Junction Temperature （^0C）	< 125
ESD Sensitivity	+4kV （HBM）
Thermal Resistance （$^0C/W$）	~4
Operating Temperature （^0C）	-20 ~ +80
Storage Temperature （^0C）	-20 ~ +50
Soldering Temperature （^0C）	260 （duration should be less than 5 seconds）

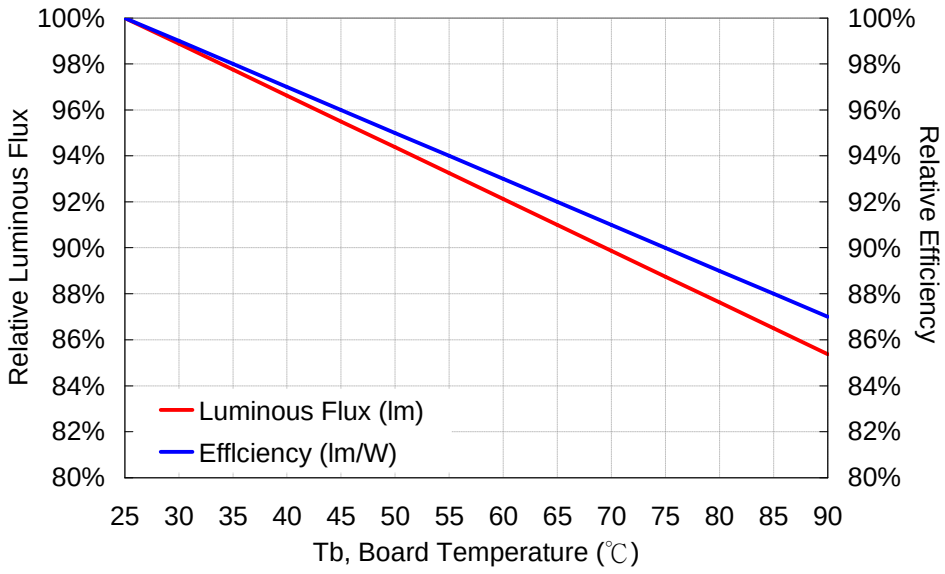
Note1: To avoid exceeding the maximum junction temperature, please set the forward current with caution.

Note2: If you decide to set the maximum DC current for Lustrous products, please pay attention on the thermal design of your luminaries

Relative Intensity vs. Current （Tj = 25˚C）

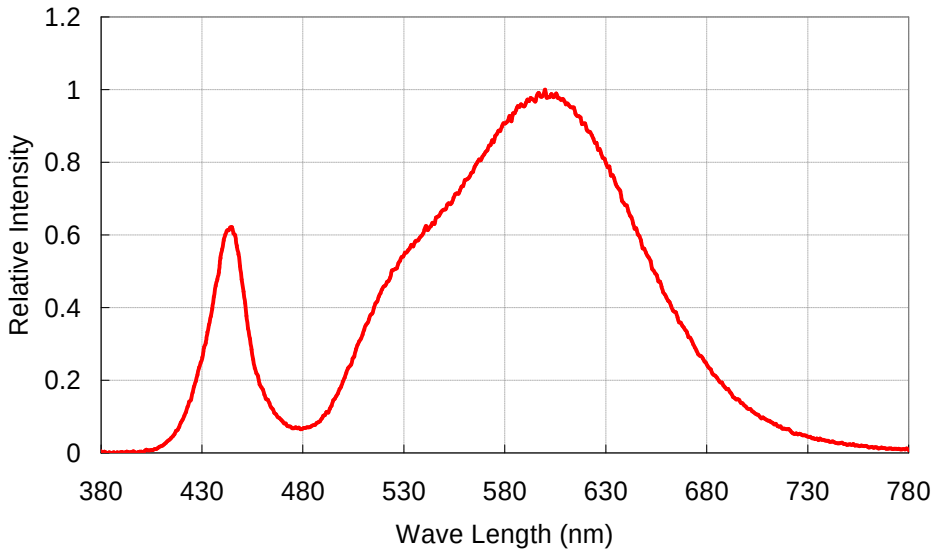


Photometric Output vs. Board Temperature （If = 700mA）

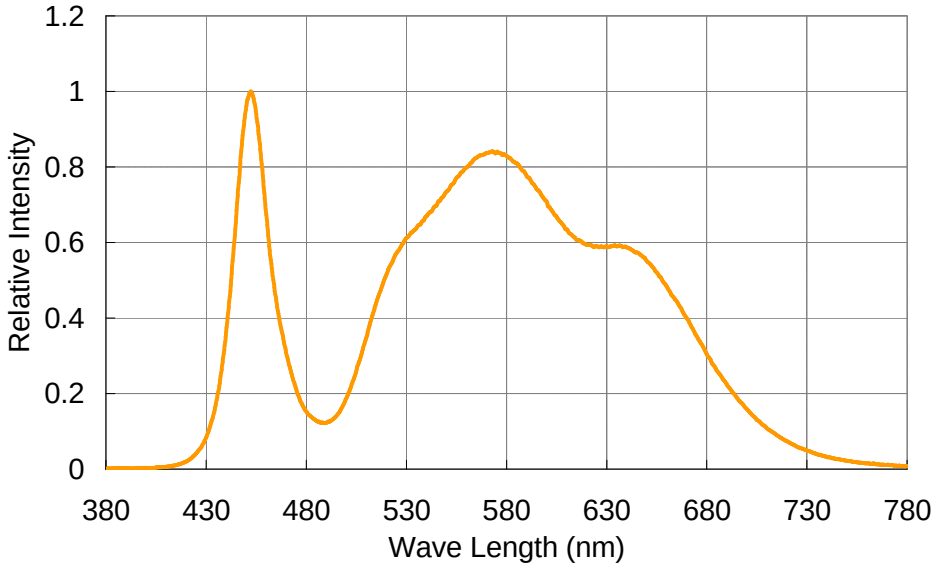


Relative Spectral Power

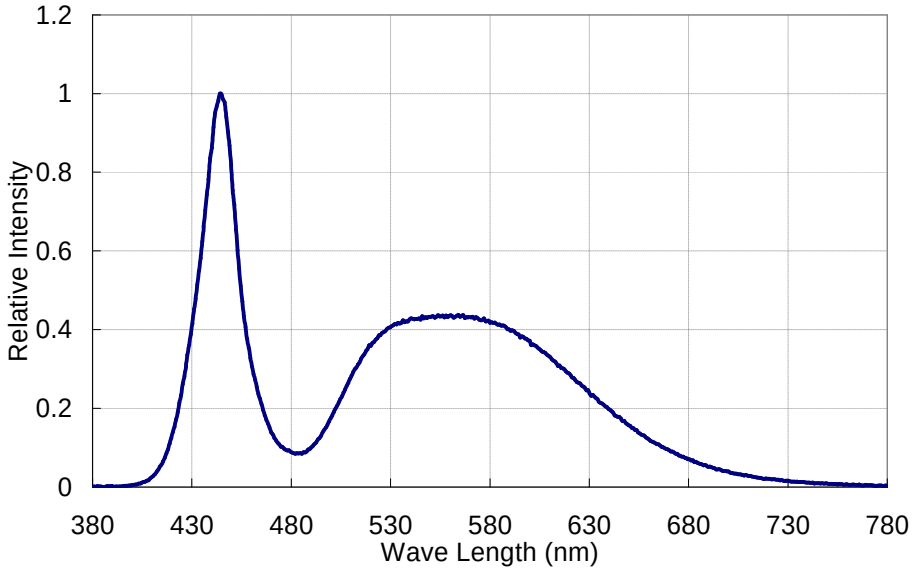
Warm White （2700K）



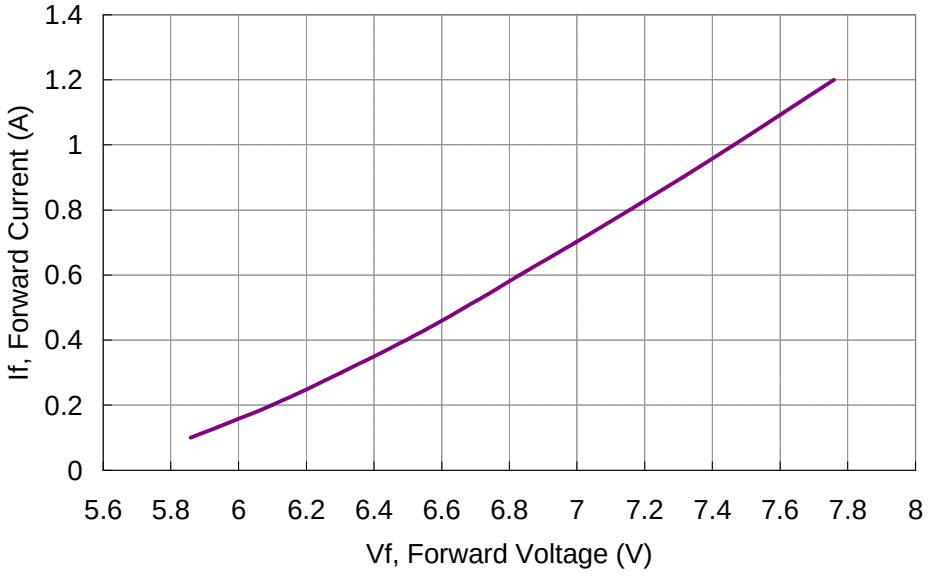
Neutral White （4000K）



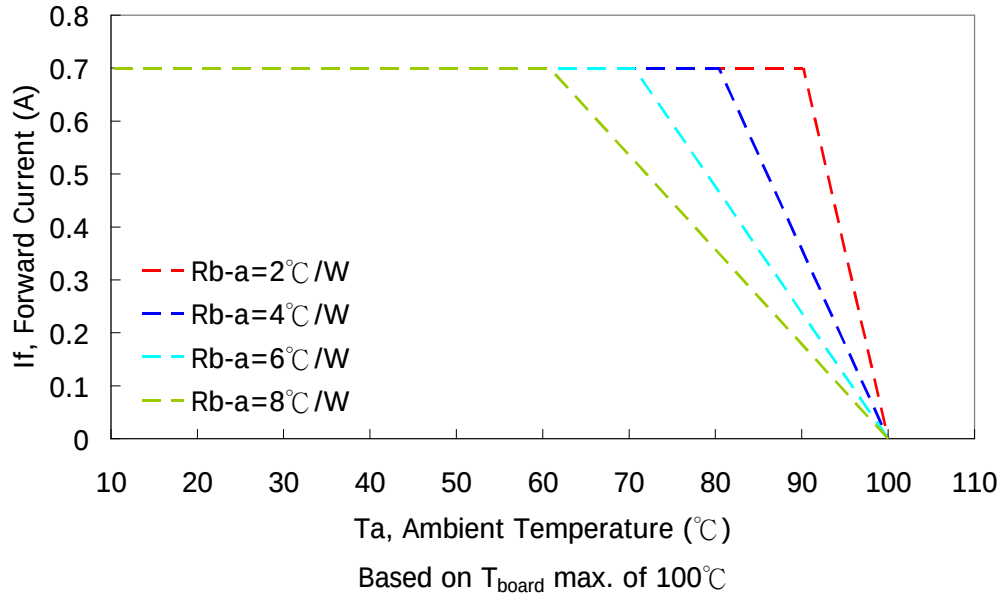
Cool White （5700K）



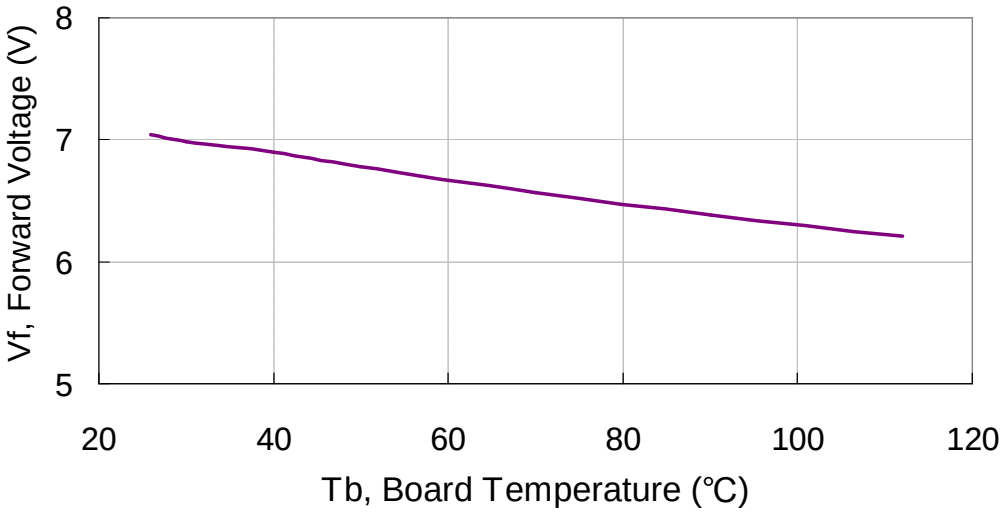
Forward Voltage vs. Current （Tj = 25˚C）



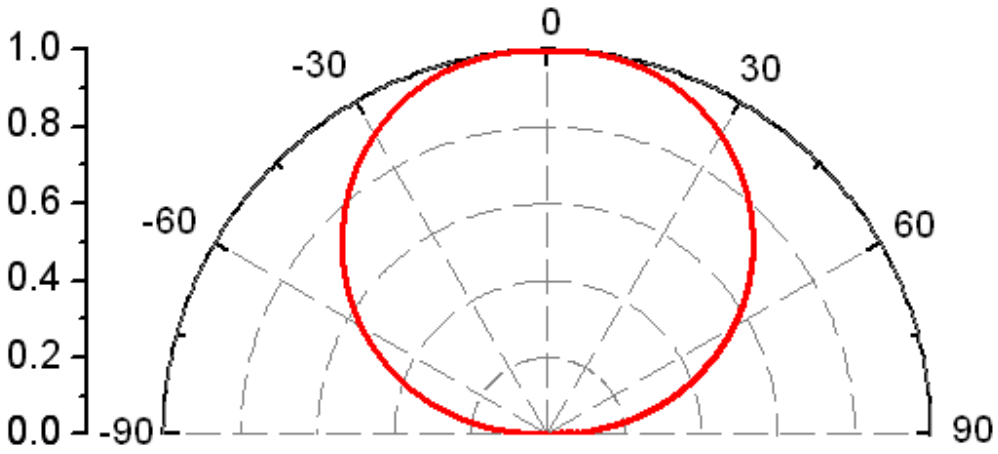
Operating Curve （Max. permissible forward current）



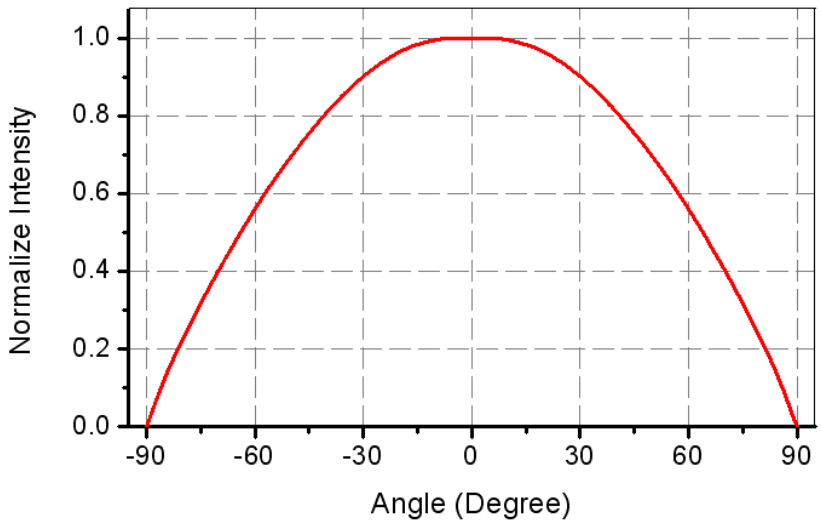
Board Temperature vs. Forward Voltage (If=700mA)



Typical Angular Beam Profile, Tj=25℃ *



View Angle: 125 degree



* Note1：Detailed beam profile is now available.

Product Binning

In the manufacturing process, there is a natural variation of specifications between LEDs. In order to minimize variation in the end product of application, Lustrous Technology uses the current ANSI code binning procedures to measure its products for performance in luminous flux and chromaticity.

The tables below list the standard photometric bins for Lustrous LED products (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	700
Neutral White	
Cool White	

Luminous Flux Binning Information *

Table.7

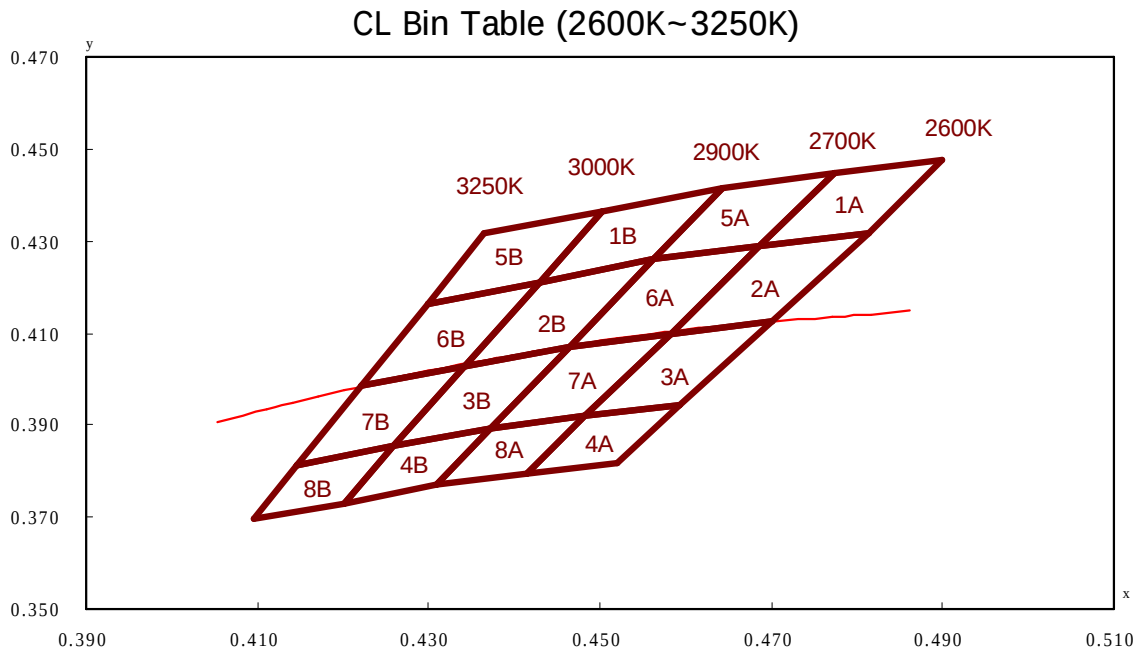
BIN Code	Lv （lm）	
	min.	max.
A	5	20
B	20	40
C	40	60
D	60	80
E	80	110
F	110	140
G	140	170
H	170	200
I	200	240
J	240	280
K	280	320

BIN Code	Lv （lm）	
	min.	max.
L	320	360
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

Note: Luminous flux is measured in total power with a tolerance rate of +/- 10%.

Chromaticity Binning Information **

Warm White



Note: Chromaticity is measured in Chromaticity Coordinate （CIE 1931-xy） with a tolerance rate of +/- 10%.

Table.8

Warm-White Bin Coordinates												
CCT （K）			BIN		Chromaticity Coordinate （CIE 1931-xy）							
Min	Typ.	Max	CODE		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

Neutral White

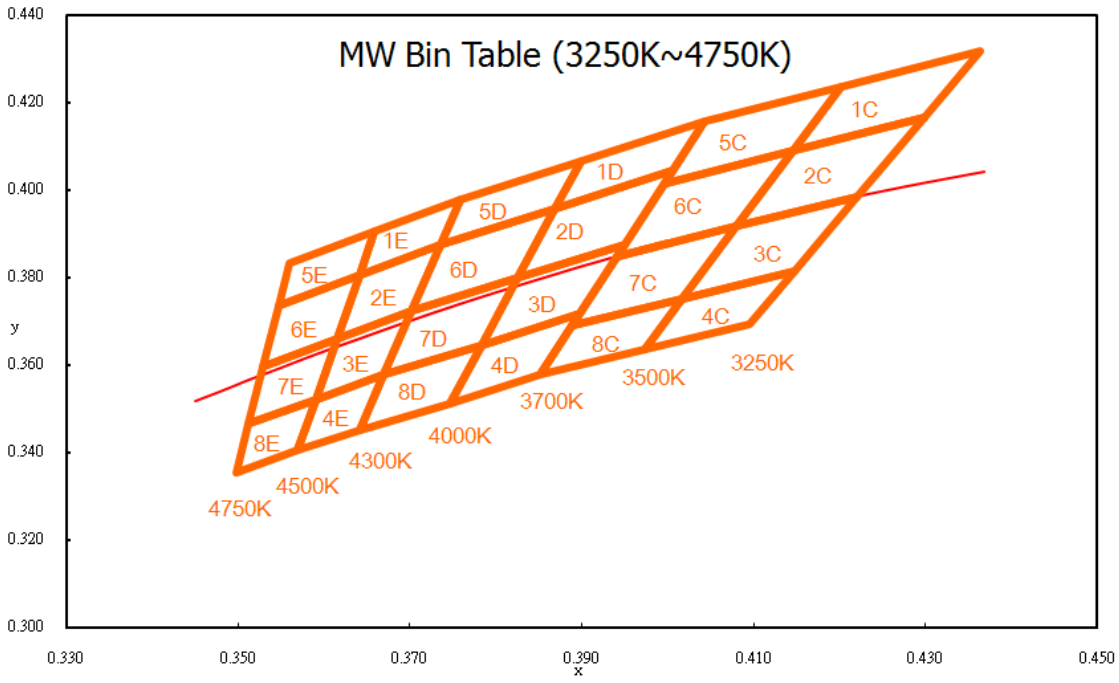


Table.9

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
				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

Cool White

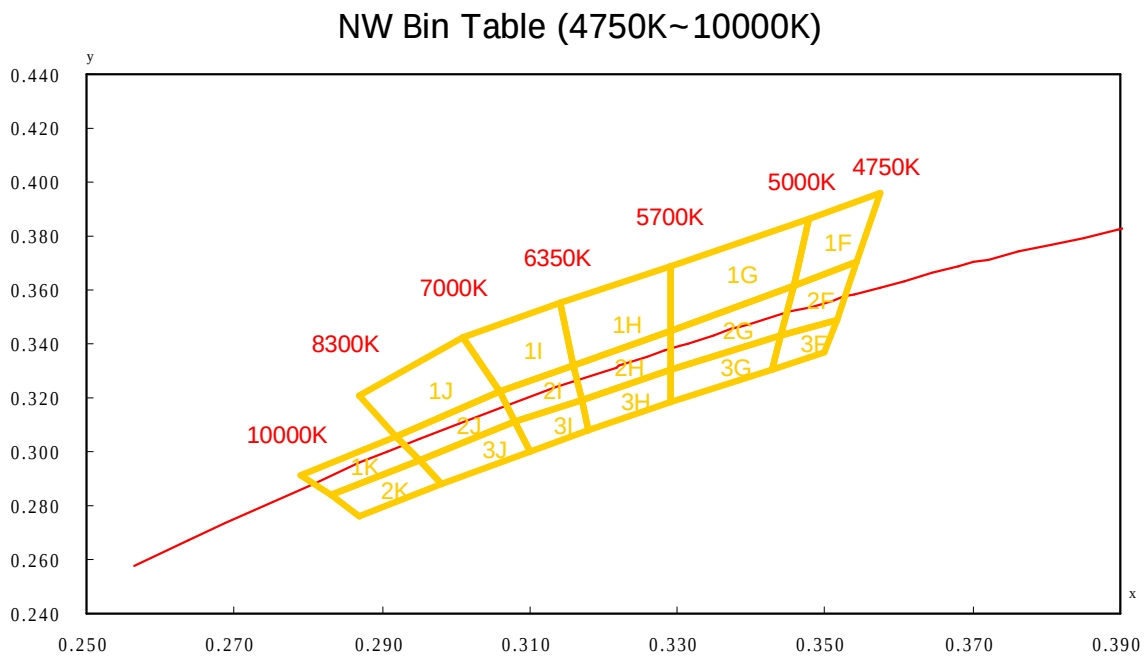

NW Bin Table (4750K~10000K)
y
0.440
0.420
0.400
0.380
0.360
0.340
0.320
0.300
0.280
0.260
0.240
0.250
0.270
0.290
0.310
0.330
0.350
0.370
0.390
x
4750K
5000K
5700K
6350K
7000K
8300K
10000K
1F
1G
2F
1H
2G
3F
1I
2H
3G
1J
2I
3H
2J
3I
3J
1K
2K

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

Print Code Guideline

5 CL V0 - J - 3B

1 2 3 4 5

BL 09 34 XXXX

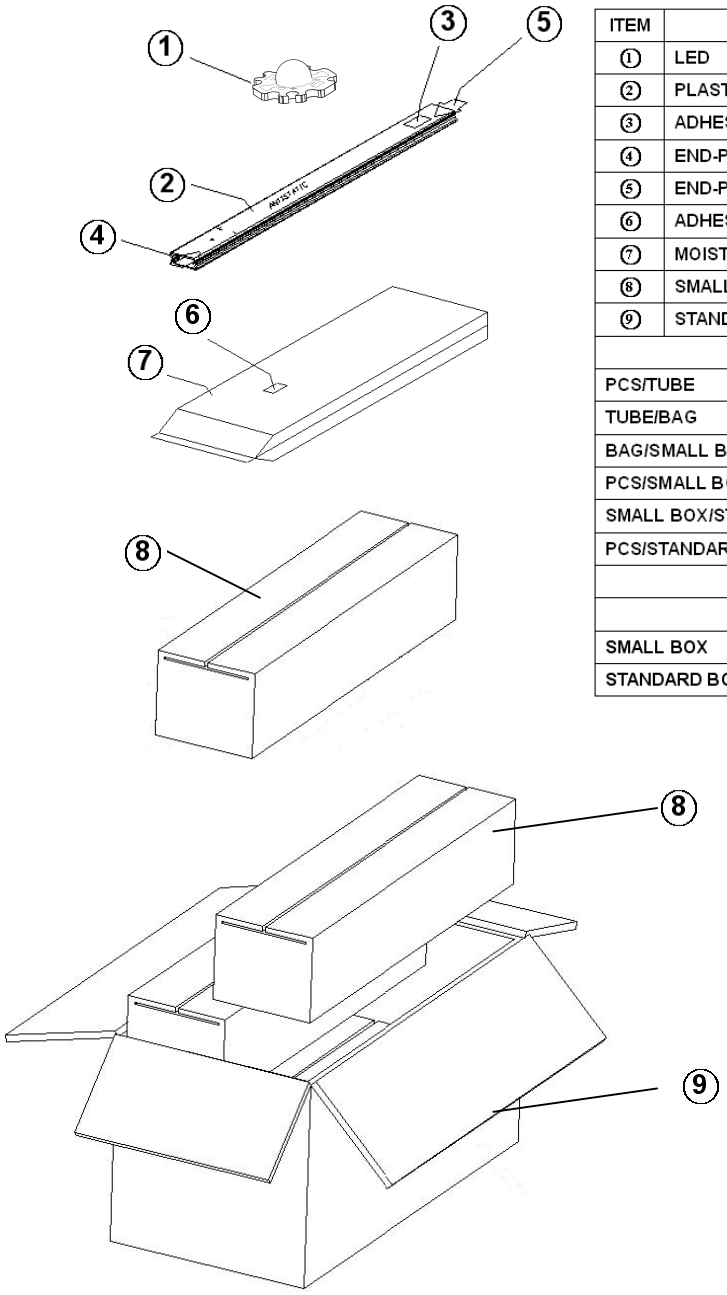
6 7 8 9 10

Table.11

1 Power	2 Color	3 Vf	4 Luminous Flux	5 Chromaticity
5: 5W	**CL**: Warm White **MW**: Neutral White **NW**: Cool White	**V0:** Without Binned	See Bin Code Definition	See Bin Code Definition

6 Vf	7 Current	8 Year	9 Week	10 Internal Code
B: 7V	L:700 mA	**09**： 2009 **10**： 2010 **11**： 2011	**01**：01st Week **20**：20th Week **45**：45th Week	

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	20
TUBE/BAG	25
BAG/SMALL BOX	2
PCS/SMALL BOX	1000
SMALL BOX/STANDARD BOX	4
PCS/STANDARD BOX	4000

SIZE AND WEIGHT		
	SIZE(mm^3)	WEIGHT(kg)
SMALL BOX	560×130×130	2.8±0.5
STANDARD BOX	580×280×280	11.9±0.5

Precaution for Use

Over-current Proof

1. Do not reverse current the LEDs we suggest current limit resistors for extra protection.
2. The maximum overshot current should be limited to 130% of normal drive current.
3. The ripple of driving current should not exceed +/-10% of normal driving current.
4. The typical driving current for this series is 700mA.
5. When driving the products, the clamp voltage must be set at 9V in driver.

Storage

1. Do not open the Moisture Barrier Bag (MBB) before you are ready to install the LEDs.
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 a year.

   3. Storage Condition （after opening the MBB）:
   - Storage Temperature:-20~50°C.
   - Relative Humidity: <60% RH.
   - The products should be used or installed as soon as possible after opening the MBB. Otherwise, the LED product must be baked at 80+/-5℃, 24 hours before installation.

Installation

Do not touch the lighting surface area during installation.

Company Information

Founded in 2004, Lustrous Technology endeavors to bring in a new era of Solid-State Lighting (SSL). In order to promote innovative new designs and maintain superior quality we have located our R&D and production facilities in Taiwan. Our commitment to excellence has helped us earn quality awards and unique patents in many countries, such as Taiwan and US. Our finest LED lighting products are designed to provide the best in performance and reliability for your next LED applications. Besides high power LED products, our professional and experienced R&D team also provides excellent secondary optical services for customers to solve any lens problems. After years of accomplishment, we have successfully established long-term and trustful worthy business relationships with several most prestigious corporations, such as Delta Electronics, Inc. and Neng Tyi Co., Ltd. If your company is considering any Lustrous products, feel free to contact our sales personnel for a brief introduction or arrange a tour of our ISO 9000 facility in Taiwan.

**Lustrous Technology may make process and material changes affecting performance and characteristics of our products without further notice. These products supplied after changes will continue to meet published specifications, but may not be identical to products supplied as samples or under prior orders.

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