

High Power Solid-State LED Light Source

LUSTRON XL5

Introduction

For a brighter solid-state light source, Lustrous Technology is proud to release the new **LUSTRON XL5**. Ideal for your high lumen output design, **LUSTRON XL5** has the ability to generate extremely high lumen output from 3,100 to 4,350 lm on one single LED product. The **LUSTRON XL5** is energy efficient, and provides high efficiency while performing its high lumen for all types of Commercial and Architectural applications. A 40-watt driver is all you need to start the high lumen light source for your next bright design.

Features

- Available in 3-step bins at 3000K, 4000K and 5700K, which ANSI C78.377 compliant
- Forward voltage: 37.2V
- Maximum drive current: 1950mA
- 140° viewing angle, uniform chromaticity profile
- RoHS compliant

LUSTRON XL5

LUSTRON XL5 Part Number Matrix

Table.1

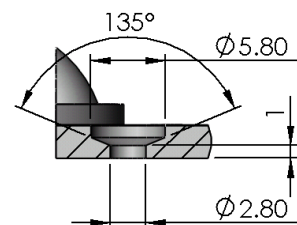
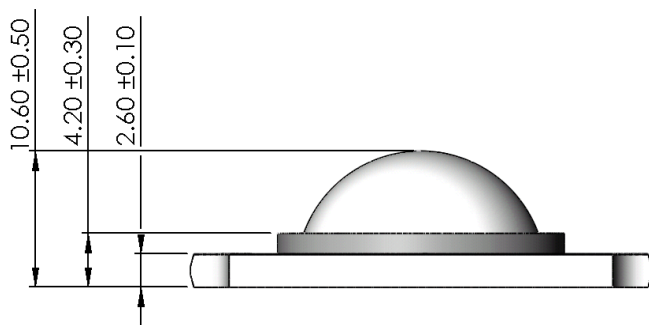
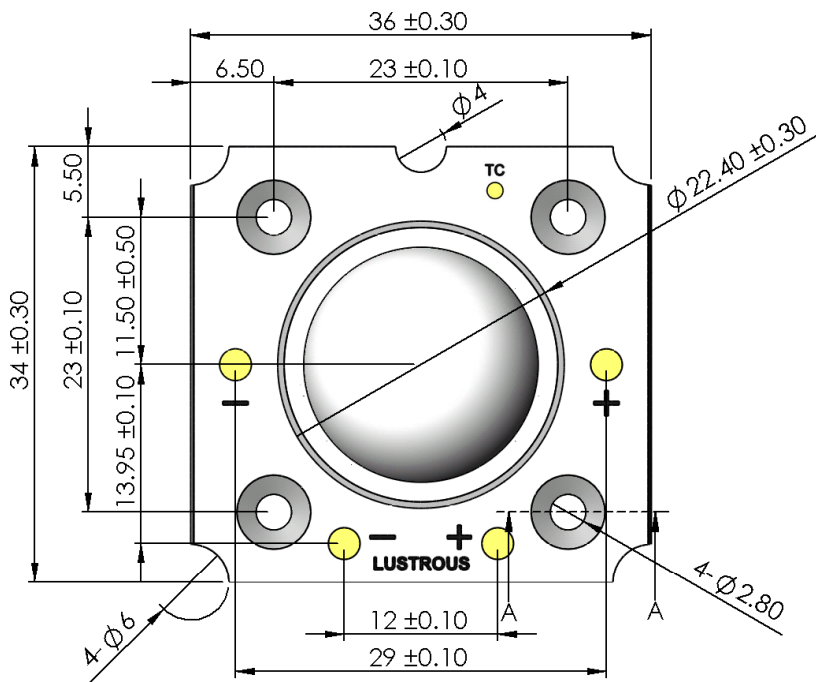
Color	P/N
Warm White	L540CLPDBA
Neutral White	L540MWPDBA
Cool White	L540NWPDDA

LUSTRON XL5 Material

Chip Material	GaN Base
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Mechanical Dimensions

LUSTRON XL5

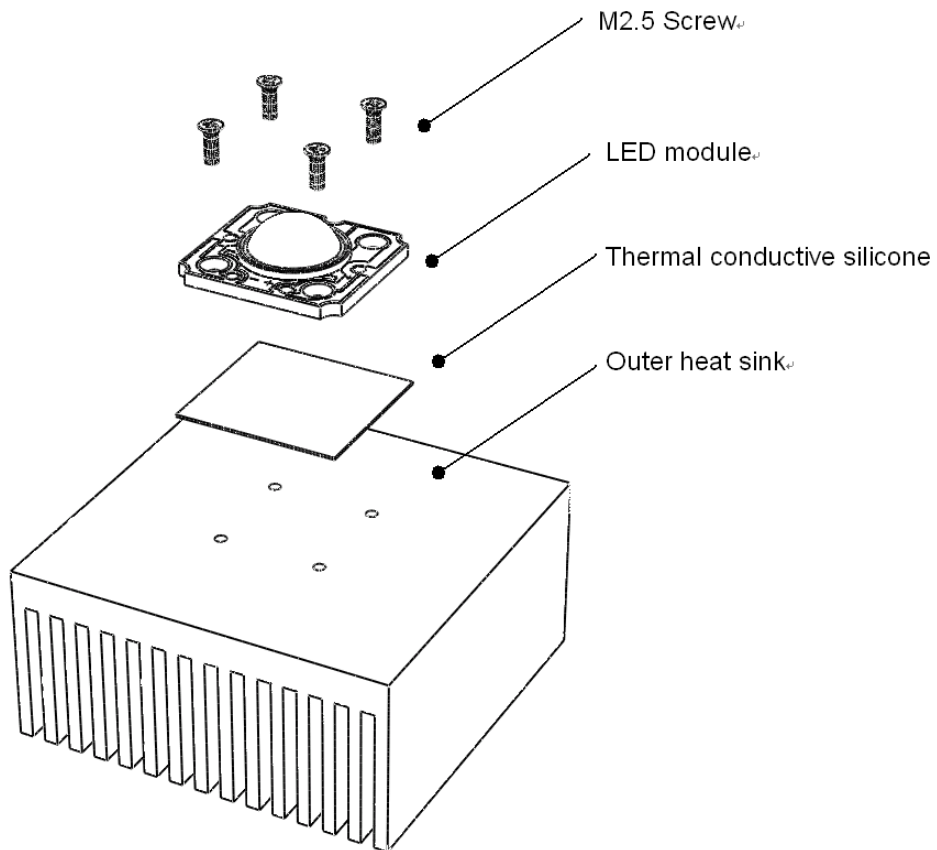


Cross Section A-A

Note1 : These drawings are not for scale. All dimensions are in millimeters.

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Recommended installation screw pitch



Warning :

Do not touch the lighting surface area during installation.

Flux Characteristics at 1000mA, T_j = 25 °C

Table.2

Color	Luminous Flux (lm)		
	Min.	Typ.	Typ. (Tc 85 °C)
Warm White (3000K)	2650	3190	2809
Neutral White (4000K)	2900	3590	3161
Cool White (5700K)	3700	4350	3831

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

Note2 : Luminous binning information can be found in Table.7.

Note3 : Luminous flux at case temperature of 85 °C is for reference.

Optical Characteristics

Table.3

Color	CCT (K)	Viewing Angle (degrees)	CRI
Warm White	3000	~140	85
Neutral White	4000		80
Cool White	5700		65

Note1 : CRI value is measured with tolerance rate of ±3.

Electrical Characteristics

Table.4

Part Number	Forward Voltage (V)		
	for 1000mA forward current		
	Min	Typ	Max
L540XXPDXX	34.8	37.2	40.8

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

Note2 : Measurements are taken under each nominal forward current.

Absolute Maximum Ratings

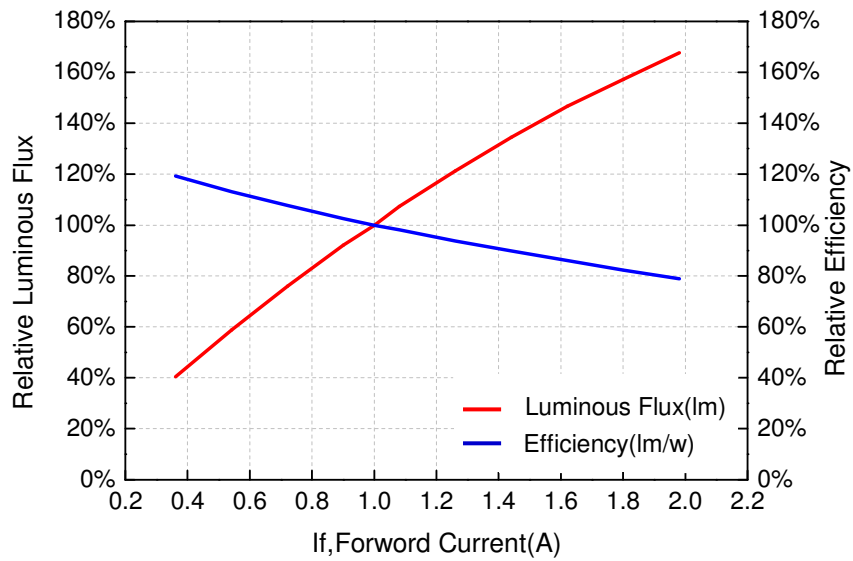
Table.5

Parameters	L540XXPDXX
Advised DC Forward Current (mA)	1000
Max. DC Forward Current (mA)	1950
LED Junction Temperature (°C)	< 125
ESD Sensitivity	+ 4kV (HBM)
Thermal Resistance (°C/W)	~ 0.5
Operating Temperature (°C)	-20 ~ +85
Storage Temperature (°C)	-20 ~ +50

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

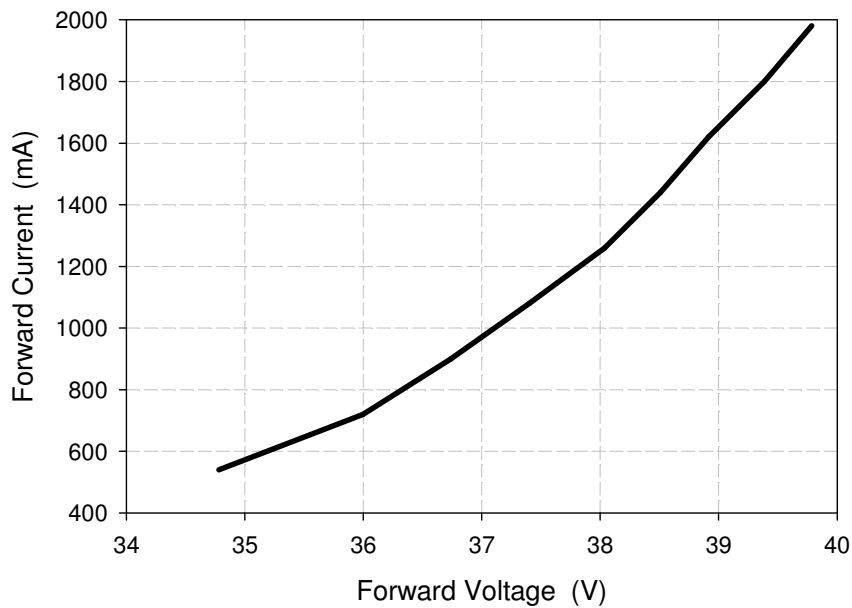
Relative Intensity vs. Current (T_j = 25°C)

L540XXPDXX



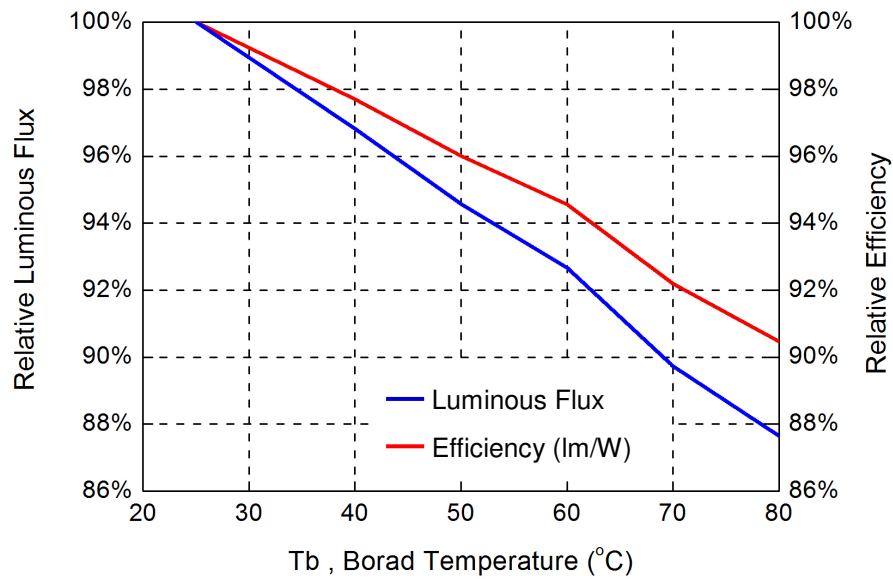
Forward Voltage vs. Current (T_j = 25°C)

L540XXPDXX



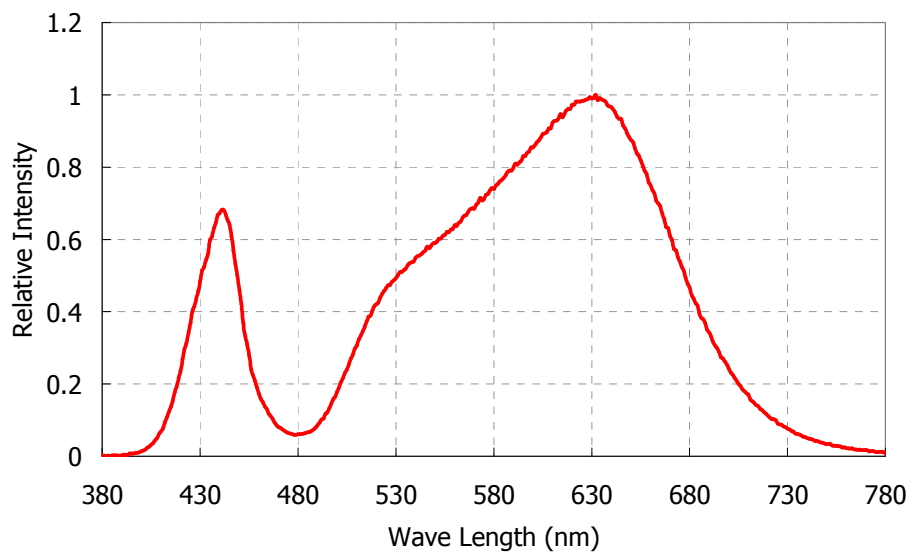
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Photometric Output vs. Board Temperature

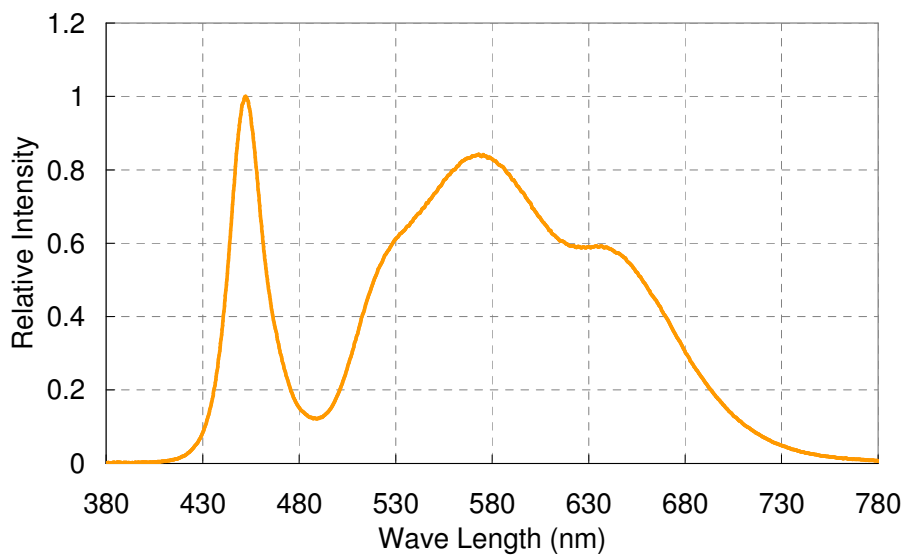


Relative Spectral Power

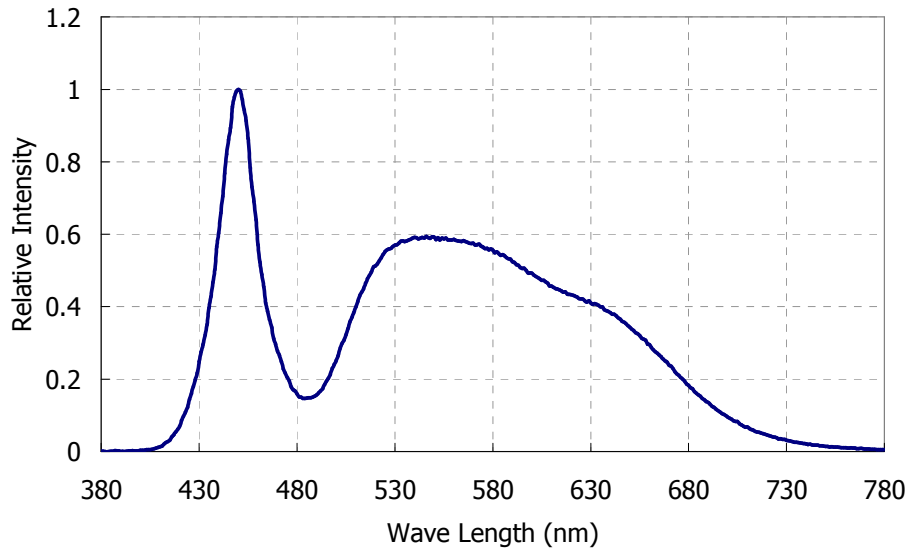
Warm White (3000K)



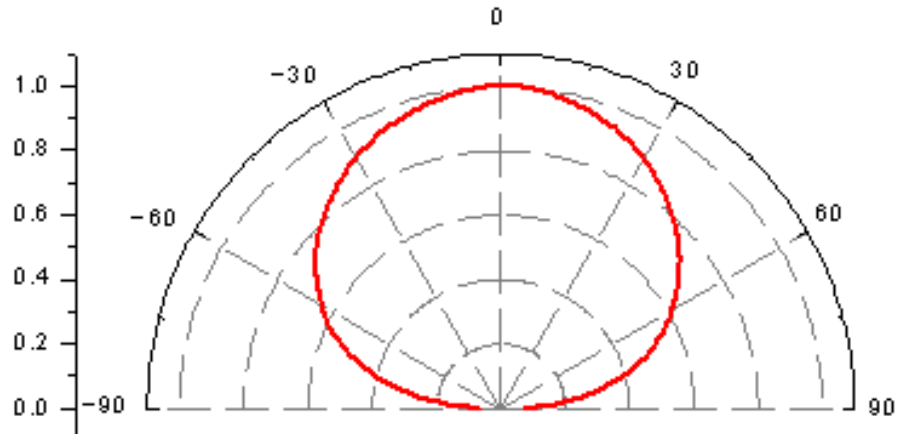
Neutral White (4000K)



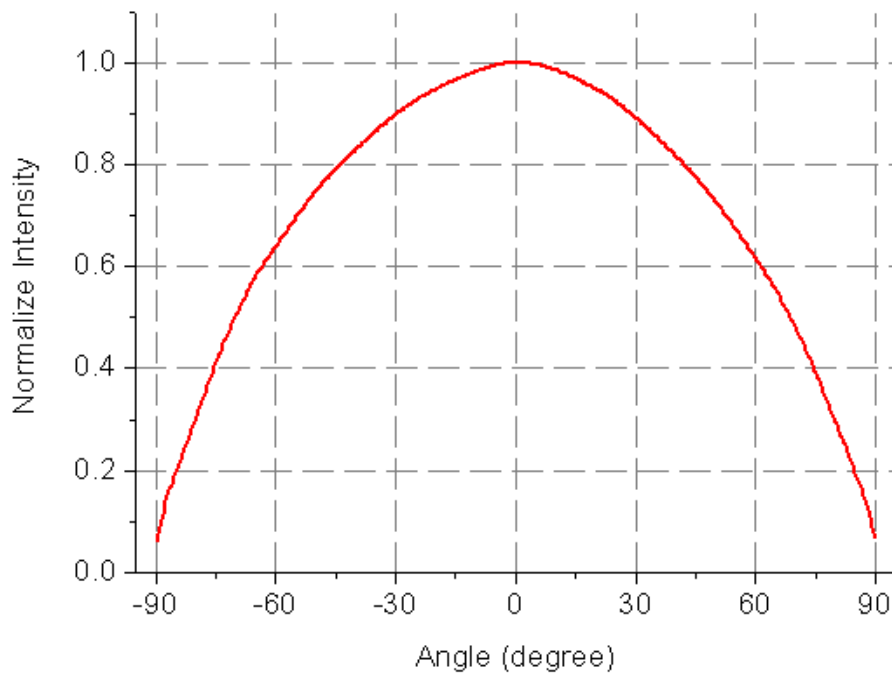
Cool White (5700K)



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



View Angle: 140 degree



Note1 : Photometric data is ready on request

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

Part Number	Forward Current (mA)
L540XXPDXX	1000

Luminous Flux Binning Information

Table.7

BIN Code	Lv (lm)		BIN Code	Lv (lm)	
	min.	max.		min.	max.
A	5	20	P	500	580
B	20	40	Q	580	660
C	40	60	R	660	740
D	60	80	S	740	860
E	80	110	T	860	980
F	110	140	U	980	1100
G	140	170	V	1100	1300
H	170	200	W	1300	1600
I	200	240	X	1600	2000
J	240	280	Y	2000	2500
K	280	320	Z	2500	3000
L	320	360	A1	3000	3600
M	360	400	A2	3600	4200
N	400	450	A3	4200	5000
O	450	500	A4	5000	5800

Note1 : Luminous flux is measured in total power with tolerance rate of $\pm 10\%$.

Chromaticity Binning Information

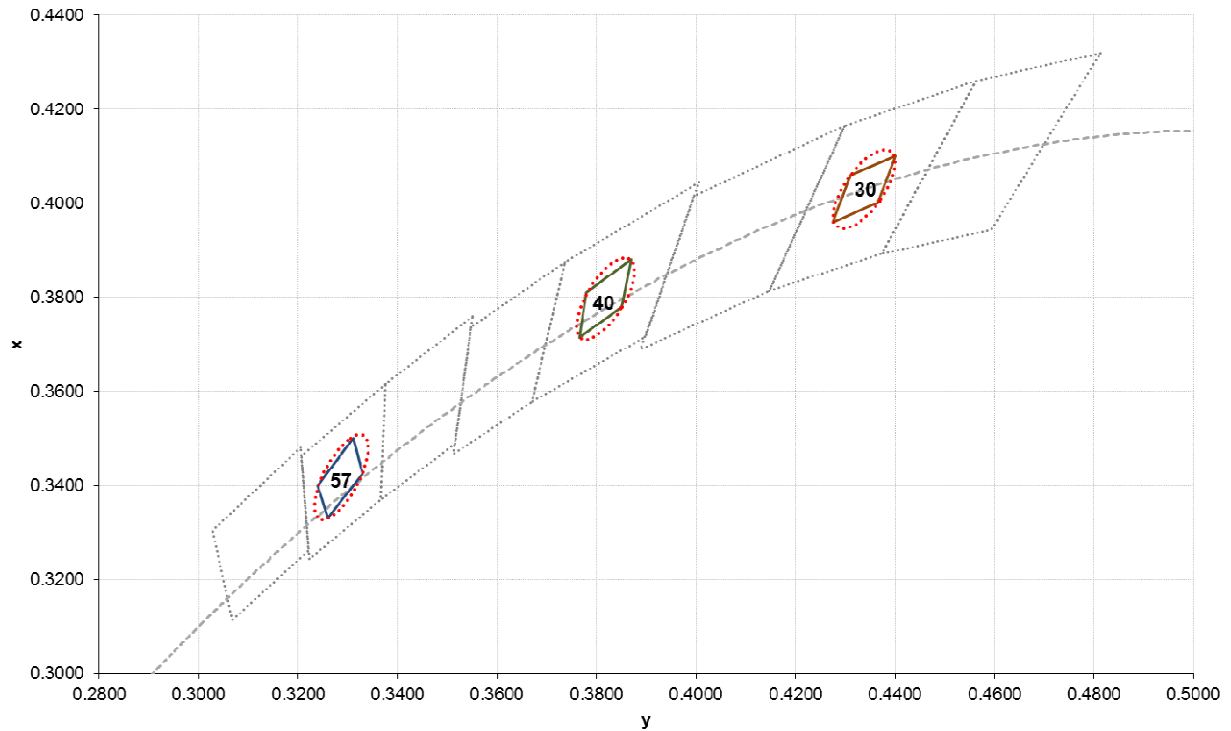


Table.8

BIN CODE	CCT (K)	Chromaticity Coordinate (CIE 1931-xy)									
		x1	y1	x2	y2	x3	y3	x4	y4	Center	
30	3000	0.4400	0.4100	0.4310	0.4060	0.4275	0.3960	0.4365	0.4000	0.4338	0.4030
40	4000	0.3870	0.3880	0.3780	0.3810	0.3765	0.3715	0.3850	0.3780	0.3818	0.3797
57	5700	0.3310	0.3500	0.3240	0.3400	0.3260	0.3330	0.3330	0.3425	0.3287	0.3417

Note 1 : Chromaticity is measured in Chromaticity Coordinate (CIE 1931-xy) with tolerance rate of ± 0.005 .

Print Code Guideline

L5 40 NW P D D A
1 2 3 4 5 6 7

XXXXXXXXXXXXXXXXXX

8

V0 – A3 – 30 XX XX XX
9 10 11 12 13 14

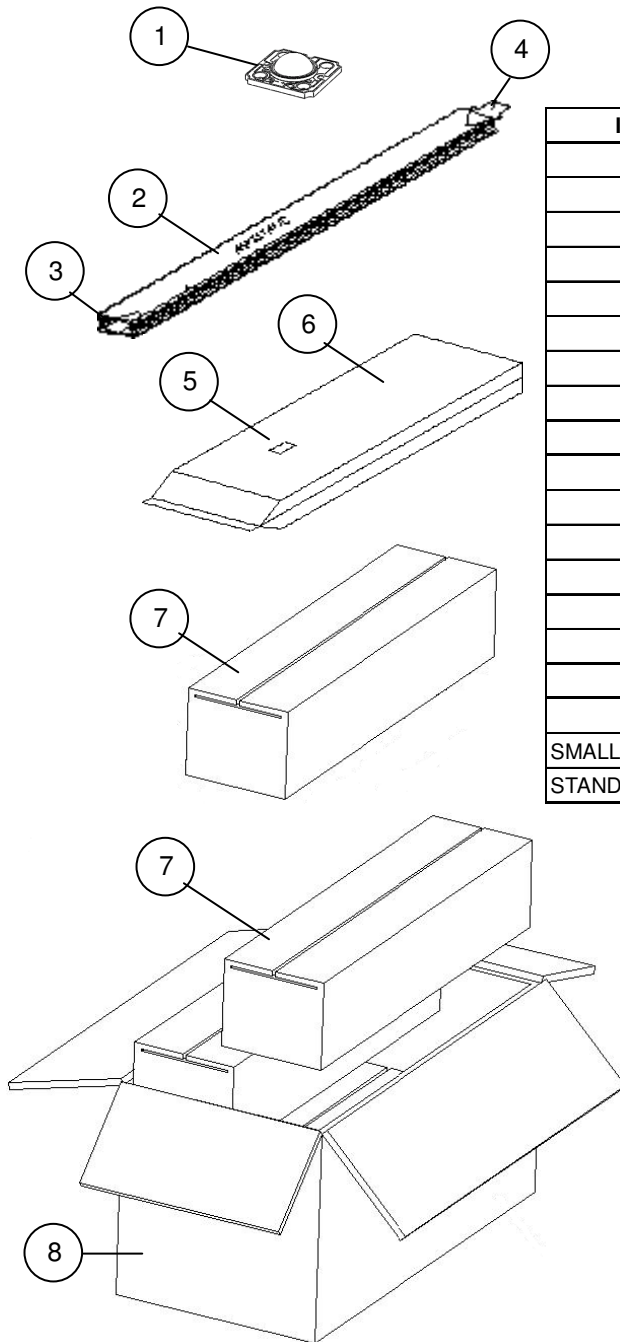
Table.12

1 Type	2 Power	3 Color	4 Vf	5 Current	6 CRI
L5	40 : 40W	NW : Cool White MW : Neutral White CL : Warm White	P : 42 V	D : 1000 mA	B : 80~90 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
14 : 2014	01 : January	01 : 01 st Week
15 : 2015	05 : May	20 : 20 th Week
	10 : October	45 : 45 th Week

Standard Packaging



ITEM	DESCRIPTION	
①	LED	
②	PLASTIC TUBE	
③	END-PLUG WHITE	
④	END-PLUG BLACK	
⑤	ADHESIVE MAIN LABEL	
⑥	MOISTURE BARRIER BAG	
⑦	SMALL BOX	
⑧	STANDARD BOX	
STACKING METHOD		
	PCS/TUBE	10
	TUBE/BAG	12
	BAG/SMALL BOX	1
	PCS/SMALL BOX	120
	SMALL BOX/STANDARD BOX	4
	PCS/STANDARD BOX	480
SIZE AND WEIGHT		
	SIZE(mm ³)	WEIGHT(kg)
SMALL BOX	440×130×130	2.22±0.5
STANDARD BOX	460×280×280	10.12±0.5

Precaution for Use

Installation

1. Do not touch the lighting surface area during installation.
2. If the product might to be used under the following conditions, the customer must evaluate its appropriateness them. This product is not designed for use under the following conditions. In places where the product might:
 - get wet due to rain.
 - suffer from damage caused by salt.
 - be exposed to corrosive gas such as Cl, S, H₂S, NH₃, SO₂, NO_x and so on.
 - be exposed to dust, fluid or oil.

Over-current Proof

1. Do not reverse current the LEDs we suggest current limit resistors for extra protection.
2. The maximum overshoot current should be limited to 1950mA.
3. The ripple of driving current should not exceed +/-10% of normal driving current.
4. When driving the products, the clamp voltage must be set at 48V 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.
 - 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.
 - Please re-seal the MBB when storing longer than 3 weeks.

Company Information

Lustrous Technology, founded in 2004, endeavors to bring a new era of solid-state lighting. Our R&D development center and production facilities are based in Taiwan, a famous island for IT technology in the world. Our products are well designed in both performance and reliability. Lustrous is one of the leading high-power LED manufacturer and solution provider in the world.

**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.

LUSTROUS[®]
Green Technology of Lighting

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