Technical Datasheet LS21

High Power Solid-State LED Light Source

COLOR X^{NHS}

Introduction

For a brighter solid-state light source, **COLOR X^{NHS}** is an energy-efficient building block generating enough light outputs suitable for most applications in lighting field. **COLOR X^{NHS}** offers the best solid-state light source and you might realize your modern ideas of lightings.

COLOR X^{NHS} is particularly designed for architects and commercial lighting designers. For specific purpose, **COLOR X^{NHS}** provides a large luminous flux or radiometric power output per package with monochromatic light（UV, blue, green, amber, or red）.

*Note1: To optimize product performance and lifetime, constant DC at advised forward current and Tb less than 50℃ should be applied.

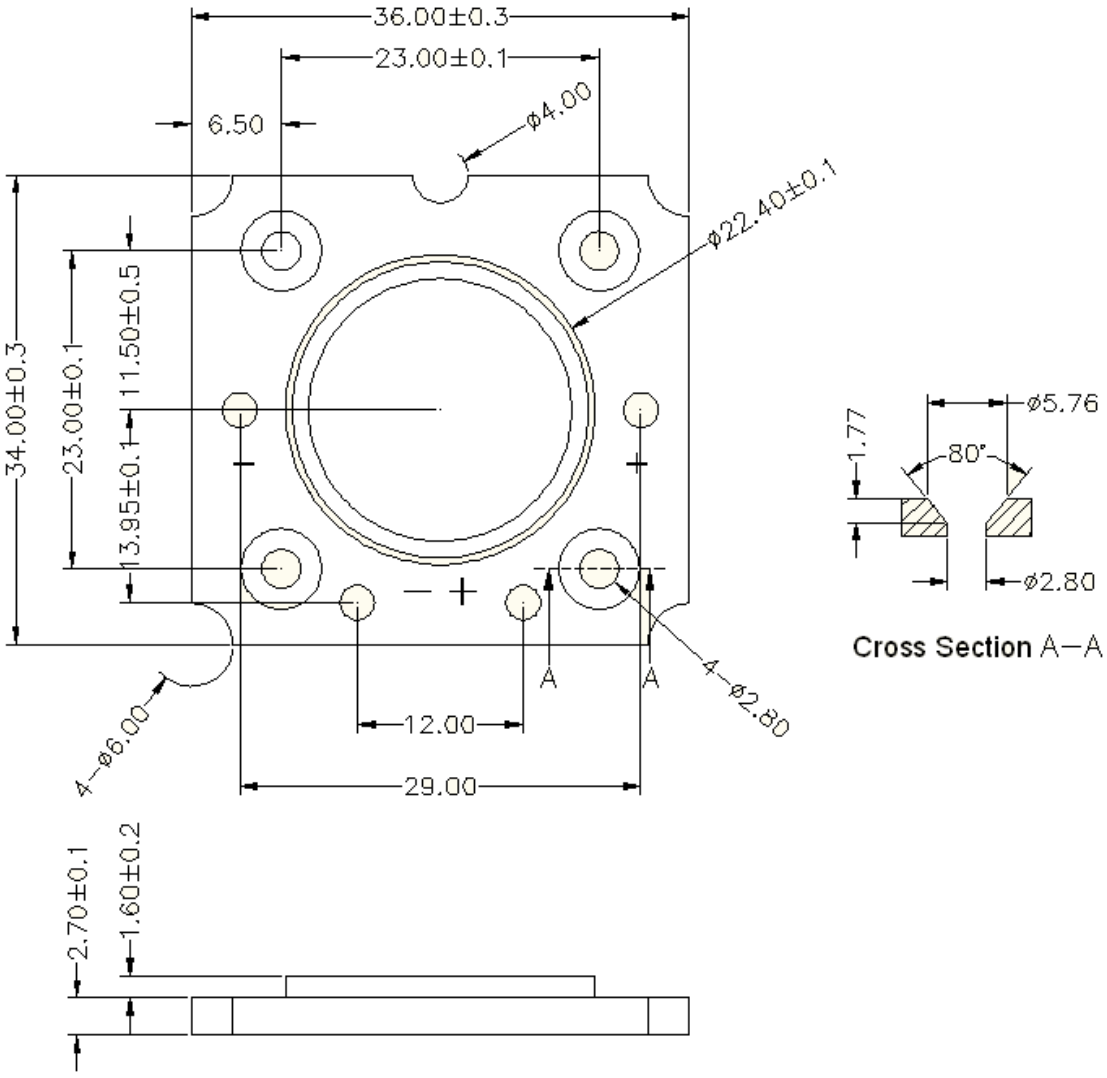
Part Number Matrix

Table.1

Color	P/N
UV （400nm）	NHS110UVC0B
Blue （470nm）	NHS110NBC0B
Green （525nm）	NHS110PGC0B
Amber （590nm）	NHS110ABC0B
Red （625nm）	NHS110NRC0B

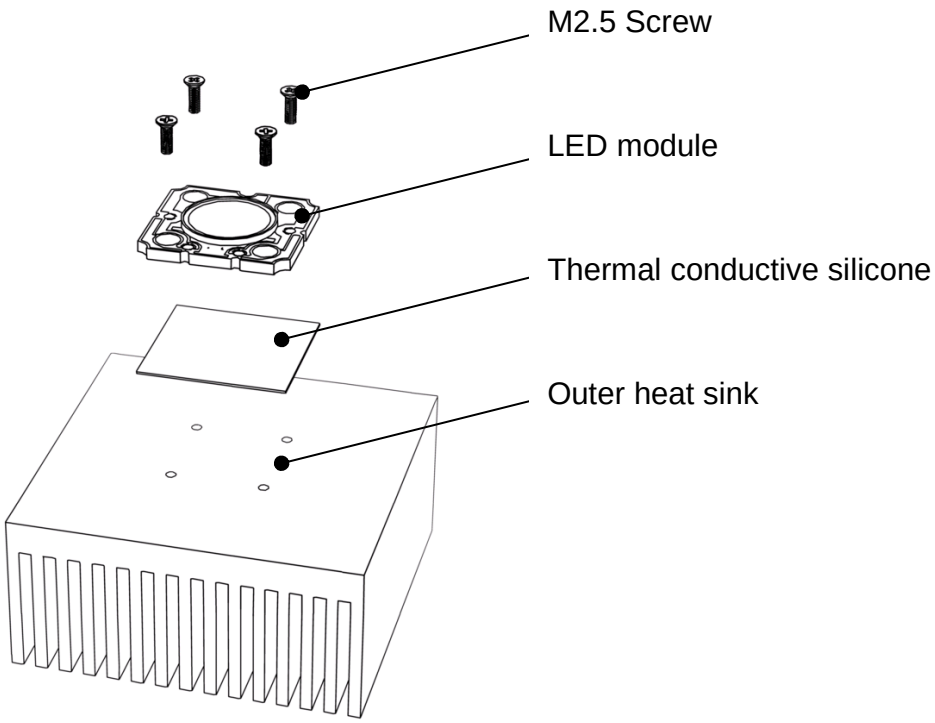
Mechanical Dimensions

COLOR X^{NHS}



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

Recommended installation screw pitch



Warning:

Do not touch the lighting area during handling and assembling.

Flux Characteristics at 350 mA, Junction Temperature Tj = 25 ^{0}C

Table.2

Color	Minimum Luminous Flux （lm） or Radiometric Power （mW）	Typical Luminous Flux （lm） or Radiometric Power （mW）
UV （400nm）	1200mW	1600mW
Blue （470nm）	75 lm	105 lm
Green （525nm）	280 lm	380 lm
Amber （590nm）	200 lm	250 lm
Red （625nm）	150 lm	180 lm

Note1: Flux characteristics are measured in total power with tolerable errors of 10%. Minimum luminous flux performance guaranteed within published operating conditions.

Note2: Higher luminous flux will be ready in the near future.

Optical Characteristics

Table.3

Color	λ_d （nm） or CCT（K）			Spectral Half-Width （nm）	Viewing Angle （degrees）	CRI
	Min	Typ	Max			
UV （400nm）	380 nm	400 nm	420 nm	~14	120	-
Blue （470nm）	460 nm	470 nm	475 nm	~25	120	-
Green （525nm）	515 nm	520 nm	530 nm	~30	120	-
Amber （590nm）	580 nm	590 nm	600 nm	~17	120	
Red （625nm）	615 nm	625 nm	635 nm	~17	120	-

Electrical Characteristics

Table.4

Color	Forward Voltage （V） for 350 mA forward current		
	Min	Typ	Max
UV （400nm）	28.8	31.5	36
Blue （470nm）	28.8	31.5	33
Green （525nm）	28.8	31.5	36
Amber （590nm）	19.8	22.5	27
Red （625nm）	19.8	22.5	27

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

Note2: Measurements are taken under each nominal forward current.

Absolute Maximum Ratings

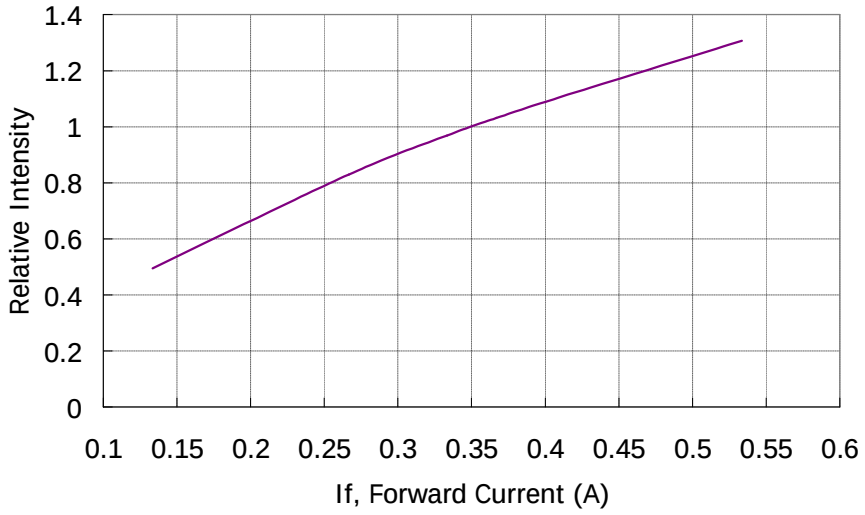
Table.5

Parameters	For 350mA forward current
	UV/ Blue/ Green/ Amber/ Red
DC Forward Current （mA）	350
Peak Pulsed Forward Current （mA）	500
LED Junction Temperature （^0C）	< 125
ESD Sensitivity	+/- 4kV （HBM）
Thermal Resistance （$^0C/W$）	~2.5
Operating Temperature （^0C）	-25 ~ +85
Storage Temperature （^0C）	-25 ~ +100
Soldering Temperature （^0C）	260 （duration should be less than 5 seconds）

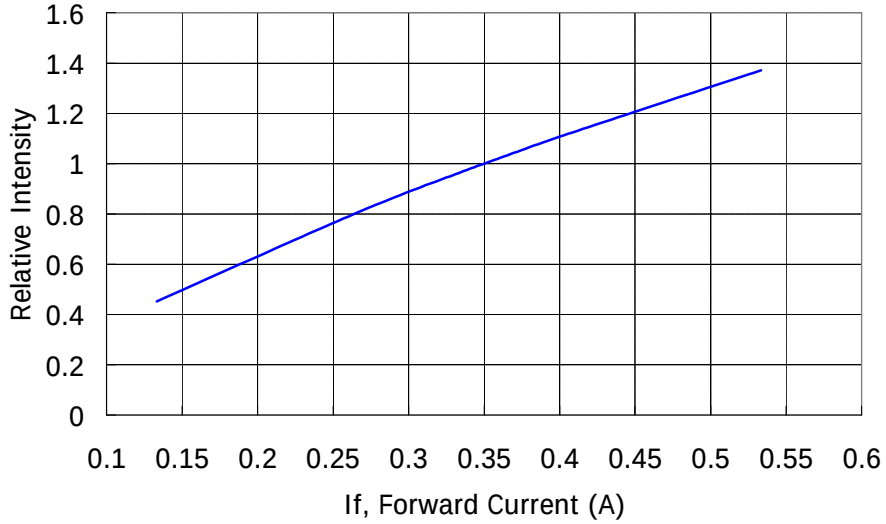
Note1: Proper current operating must be observed to maintain junction temperature below the maximum.

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

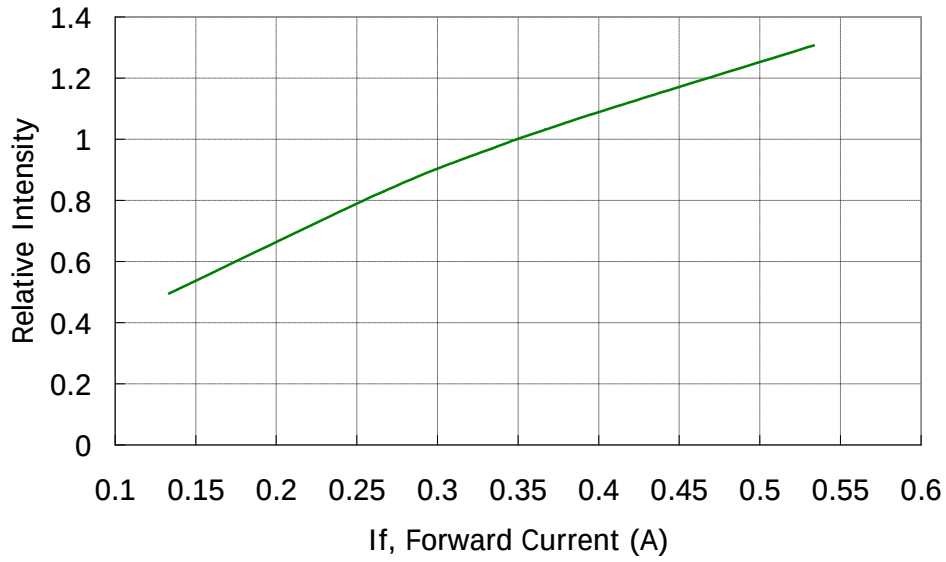
UV （400nm）



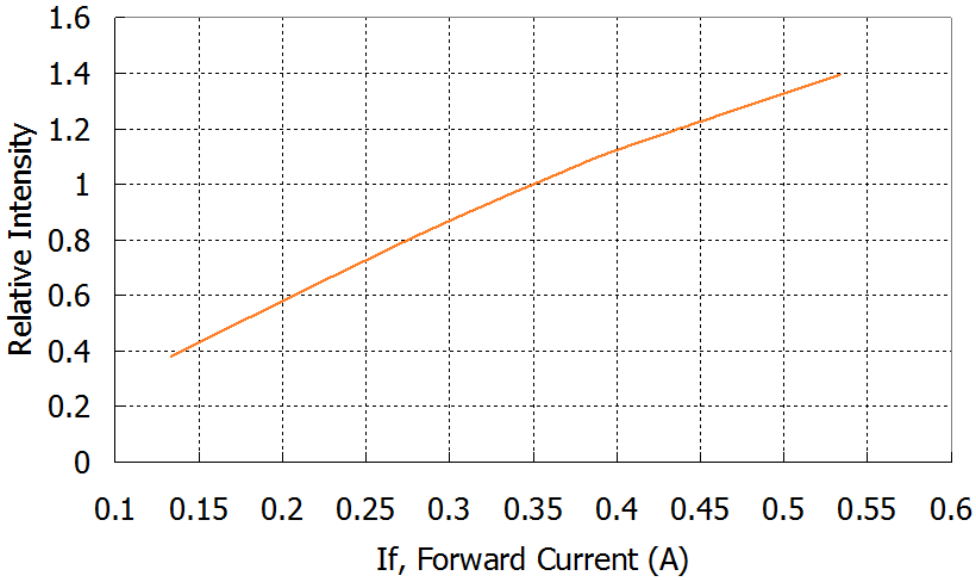
Blue （470nm）



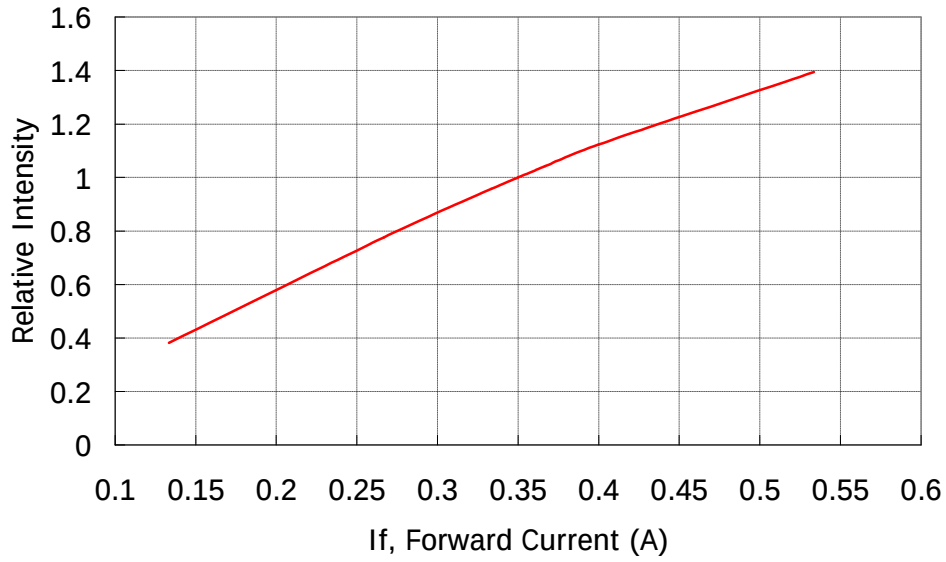
Green （525nm）



Amber （590nm）

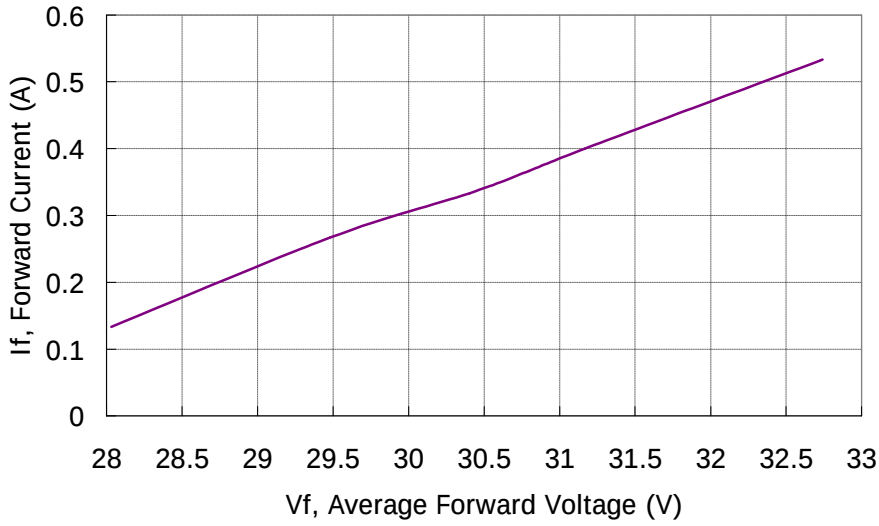


Red （625nm）

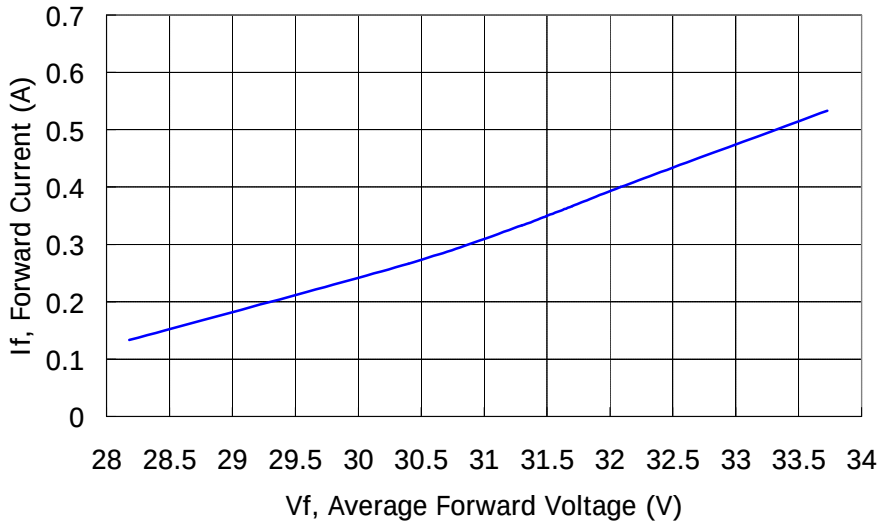

1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Relative Intensity
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.55
0.6
If, Forward Current (A)

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

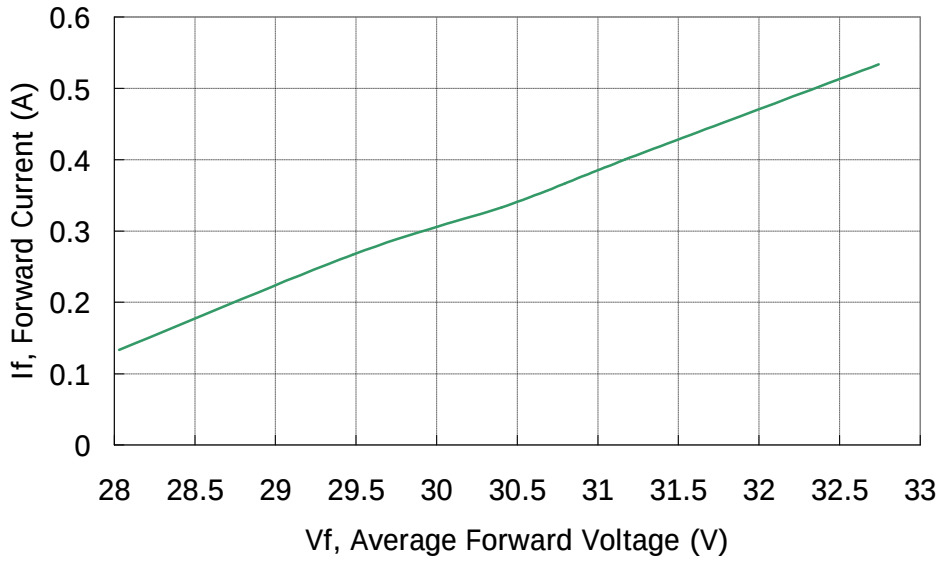
UV （400nm）



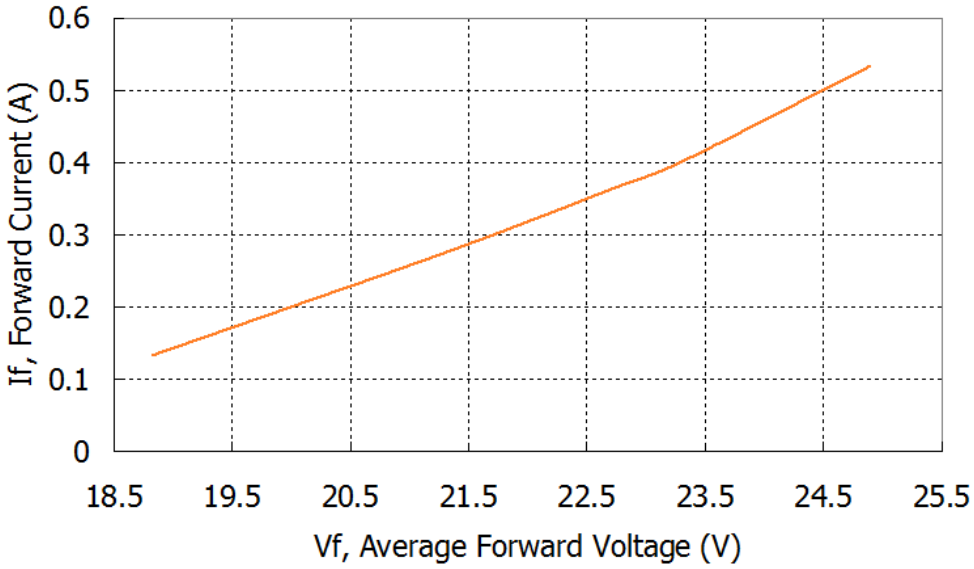
Blue （470nm）



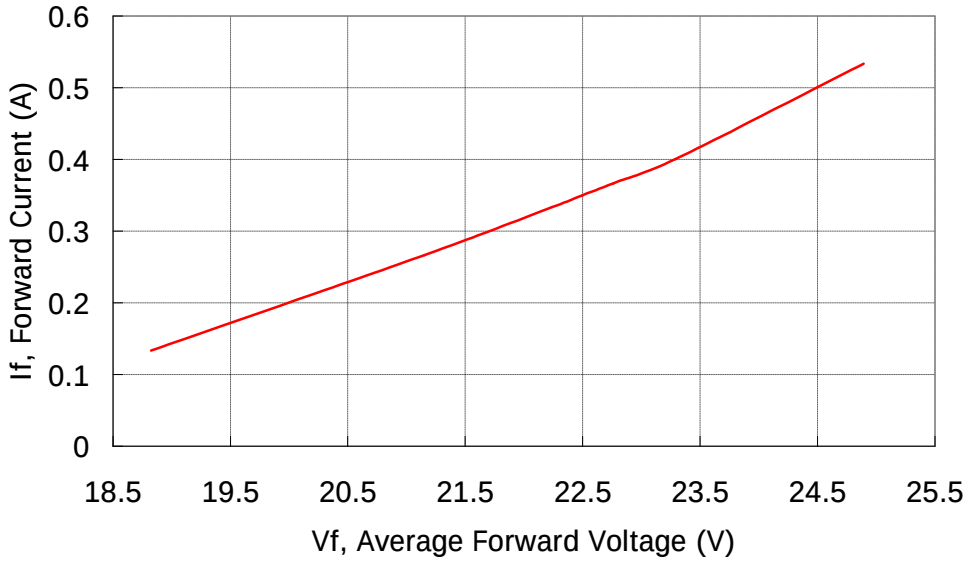
Green （525nm）



Amber （590nm）



Red （625nm）


0.6
0.5
0.4
0.3
0.2
0.1
0
If, Forward Current (A)
18.5
19.5
20.5
21.5
22.5
23.5
24.5
25.5
Vf, Average Forward Voltage (V)

Bin Code

n UV （400nm）

BIN Table for **NHS110UV**			
NO	BIN CODE	λ_d, Dominate Wave length （nm）	
		min	max
1	V0-L0-UV1	380	420

n Blue （470nm）

BIN Table for **NHS110NB**			
NO	BIN CODE	λ_d, Dominate Wave length （nm）	
		min	max
1	V0-L0-NB1	460	475

n Green （525nm）

BIN Table for **NHS110PG**			
NO	BIN CODE	λ_d, Dominate Wave length （nm）	
		min	max
1	V0-L0-PG1	515	530

n Amber （590nm）

BIN Table for **NHS110AB**			
NO	BIN CODE	λ_d, Dominate Wave length （nm）	
		min	max
1	V0-L0-AB1	580	600

n Red （625nm）

BIN Table for **NHS110NR**			
NO	BIN CODE	λ_d, Dominate Wave length （nm）	
		min	max
1	V0-L0-NR1	615	635

Print Code Guideline

N H S 1 1 0 N B C 0 B -XXXXX

1 2

X X X X X X X X X X X X X X

2

V 0 – A 0 – N B 2 – X X X X X X

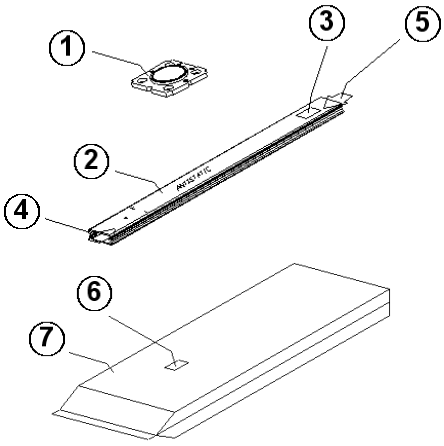
3 4 5 6 7 8

Table.11

1 P/N	2 Internal Code	3 Vf	4 Luminous Flux
UV: N H S 1 1 0 U V C 0 B Blue: N H S 1 1 0 N B C 0 B Green: N H S 1 1 0 P G C 0 B Amber: N H S 1 1 0 A B C 0 B Red: N H S 1 1 0 N R C 0 B		See Bin Code Definition	See Bin Code Definition

5 Chromaticity	6 Year	7 Month	8 Week
See Bin Code Definition	**08**: 2008 **09**: 2009 **10**: 2010	**01**：January **05**：May **10**：October	**01**：01st Week **20**：20th Week **45**：45th Week

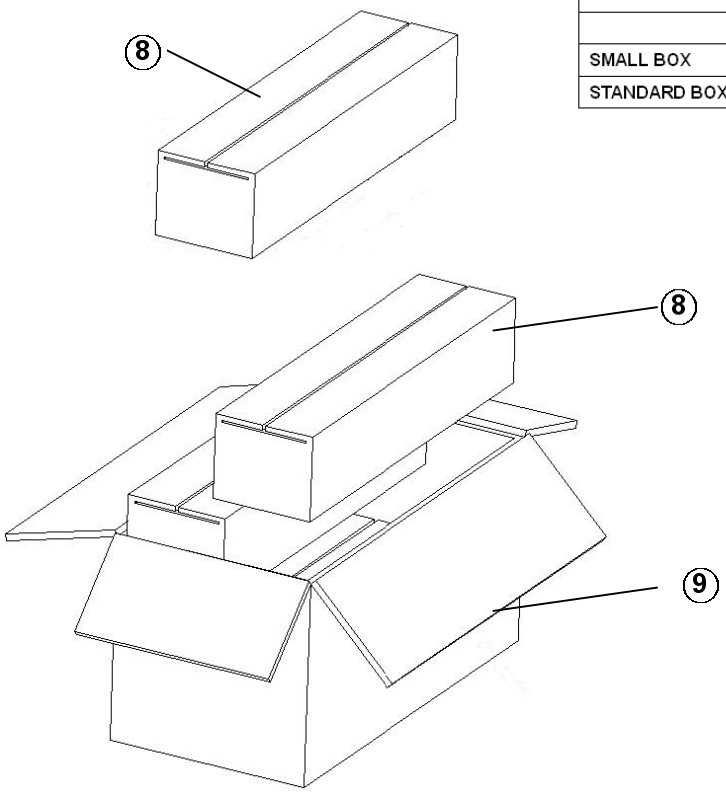
Standard Packaging



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	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	560×130×130	3.4±0.5
STANDARD BOX	580×280×280	14.3±0.5



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 overshot of driving current should be limited under normal driving current * 1.3 times.
3. The ripple of driving current should not be over +/-10% of normal driving current.
4. The typical driving current for this series is 350mA.
5. When driving the products, the clamp voltage must be set at 35V 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: -40~90°C
   - Relative Humidity < 90% 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: -40~90°C
   - Relative Humidity < 90% RH
   - The products should be used（assembled）as soon as possible after opening the MBB.

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 TECHNOLOGY LTD
Green Technology of Lightings

Website: www.LUSTROUS.com.tw
Email: sales@lustrous.com.tw
Tel: +886-2-8647-2862
Fax: +886-2-8647-2863
Address: 5F, No 212-1, Sec.3, Datong Rd, Shiji City, Taipei County 221, Taiwan