LUSTROUS®

GREEN TECHNOLOGY OF LIGHTINGS

Technical Datasheet LS08

(All patents pending)

High Power Solid-State LED Light Source

LUSTRON X^{NLB}

Introduction

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

LUSTRON X^{NLB} provides the best possible color rendering capability and color temperature. With a nominal correlated color temperature of 2500~3100K and 4750~10000K for Cool White, similar to conventional indoor light source, **LUSTRON X^{NLB}** is particularly designed for architects and commercial lighting designers.

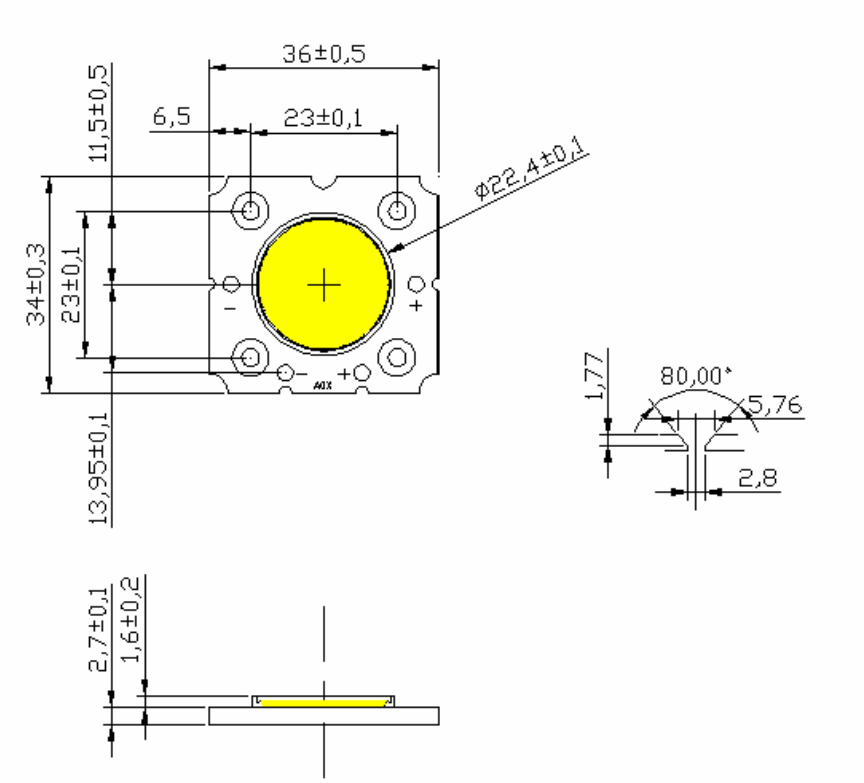
LUSTRON X^{NLB} Part Number Matrix

Table.1

Color	P/N
Warm White (2700K)	NAS110CLC0B-NNFSD
Cool White (5700K)	NAS110NWC0B-NNFSD

Mechanical Dimensions

LUSTRON X^{NLB}



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

Stress Testing Item

Stress Test	Stress Condition	Stress Duration	Failure Criteria	Result (failed/tested)
RTOL	Ta=25℃ Tj＜=125℃,If=1050mA	Time=1000hrs	Note1	0/22
TMSK	-25℃ to 125℃ 15mins dwell time, 20 seconds transfer time	100 cycles	Note1	0/22
Mechanical Shock	1500 G, 0.5 ms pulse width 5 shocks each, 6 axis		Note2	Pending
Salt Atmosphere	Temp = 35°C Salt deposit 30 g/sq.m/da	Time=48 hrs	Note2	Pending
Solderability	Pb-Free reflow solder profile (JEDEC J-STD-020-D), or T=260℃,10sec., 2 times		Note1	0/22

Note1: A failure is an LED that is open, shorted, or loses more than 15% of its initial light output.

Note2: A failure is an LED that is open or shorted.

Flux Characteristics at 1050 mA, Junction Temperature Tj = 25 ^0C

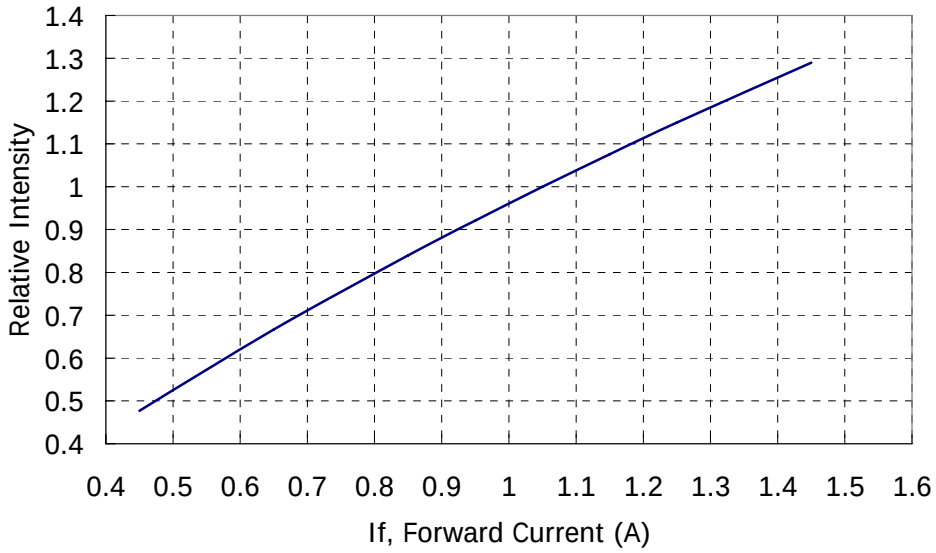
Table.2

Color	Minimum Luminous Flux (lm) or Radiometric Power (mW)	Typical Luminous Flux (lm) or Radiometric Power (mW)
Warm White	465 lm	480 lm
Cool White	480 lm	520 lm

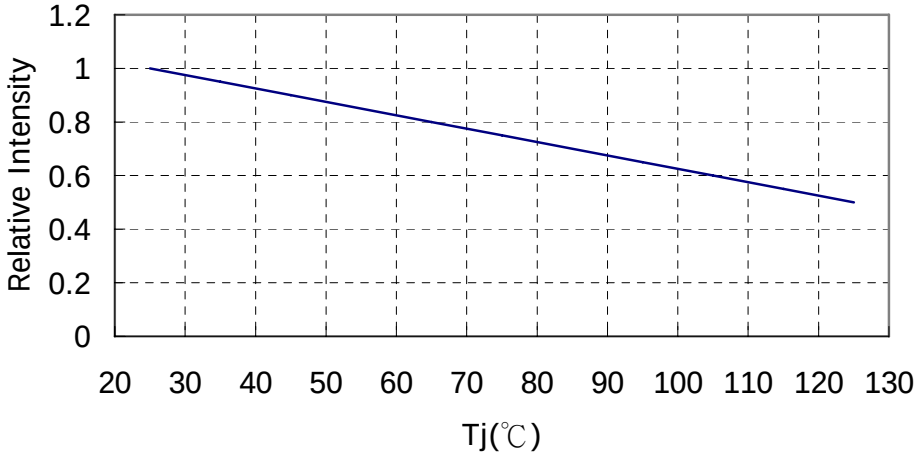
Note1: Brightness is measured in total power with tolerable errors of 10%.Minimum luminous flux performance guaranteed within published operating conditions.

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

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

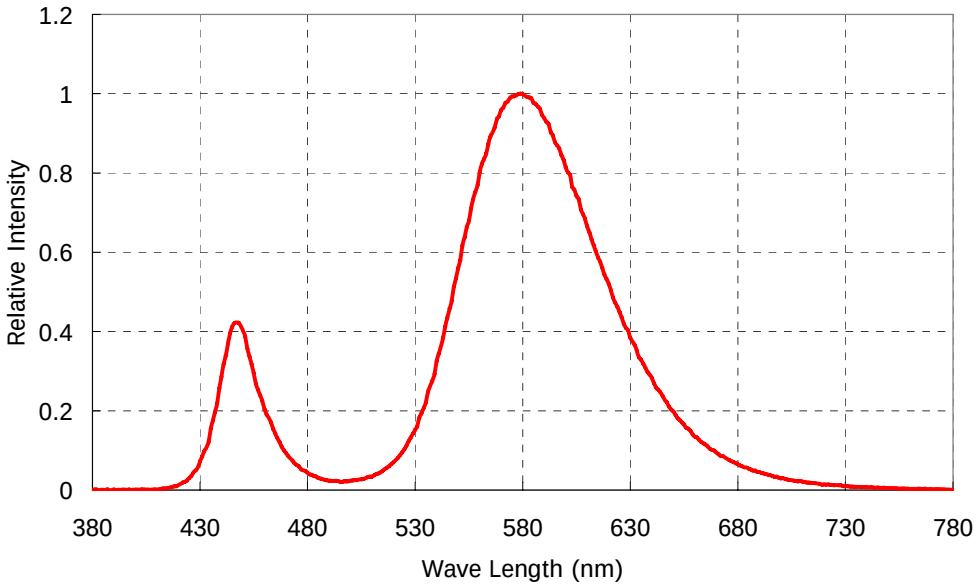


Photometric Output vs. Junction Temperature (If = 1050 mA)

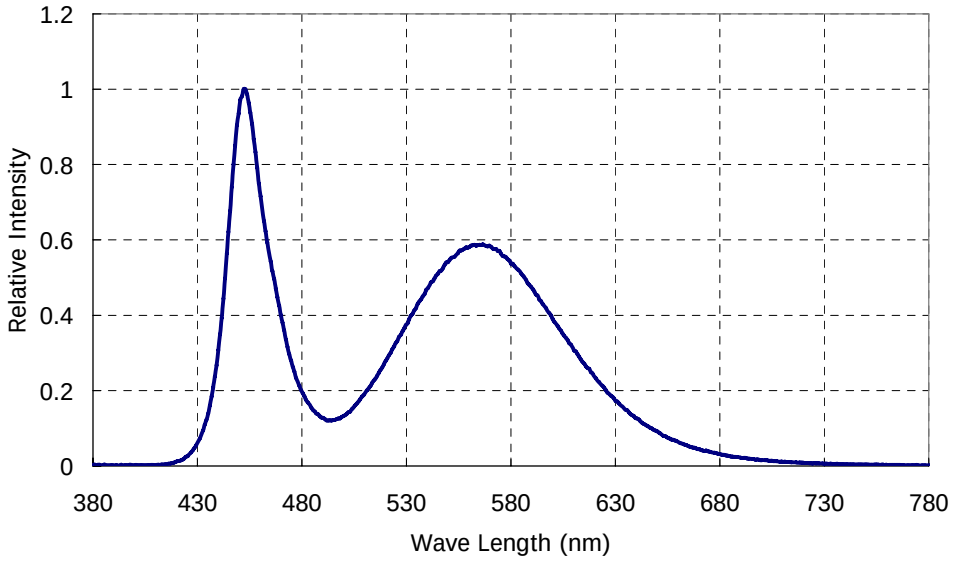


Relative Spectral Power

Warm White (2700K)



Cool White (5700K)



Optical Characteristics

Table.3

Color	λ_d (nm) or CCT(K)			Spectral Half-Width (nm)	Viewing Angle (degrees)	CRI
	Min	Typ	Max			
Warm White	2500K	2700K	3100K	-	120	~40
Cool White	4750K	5700K	10000K	-	120	~60

Electrical Characteristics

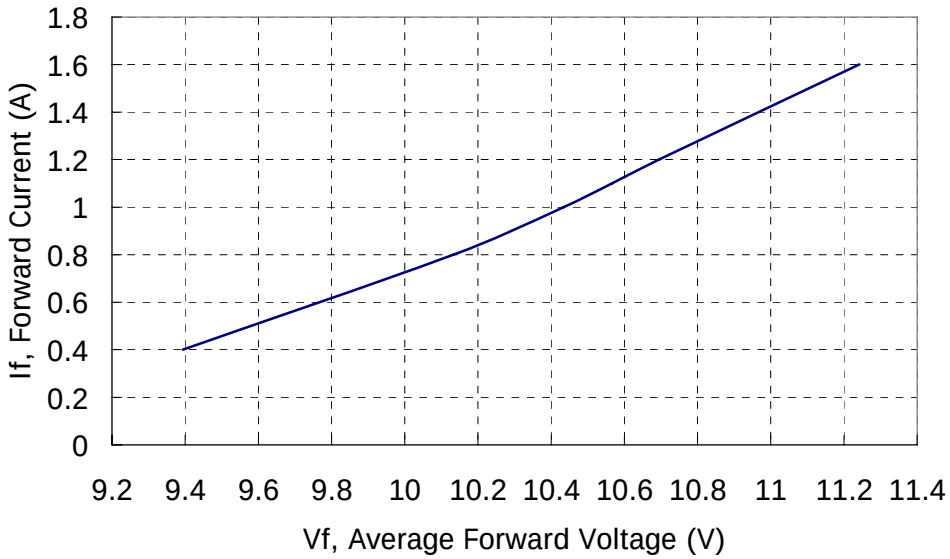
Table.4

Color	Forward Voltage (V) for 1050 mA forward current		
	Min	Typ	Max
Warm White (2700K)	9.4	10.5	11.5
Cool White (5700K)	9.4	10.5	11.5

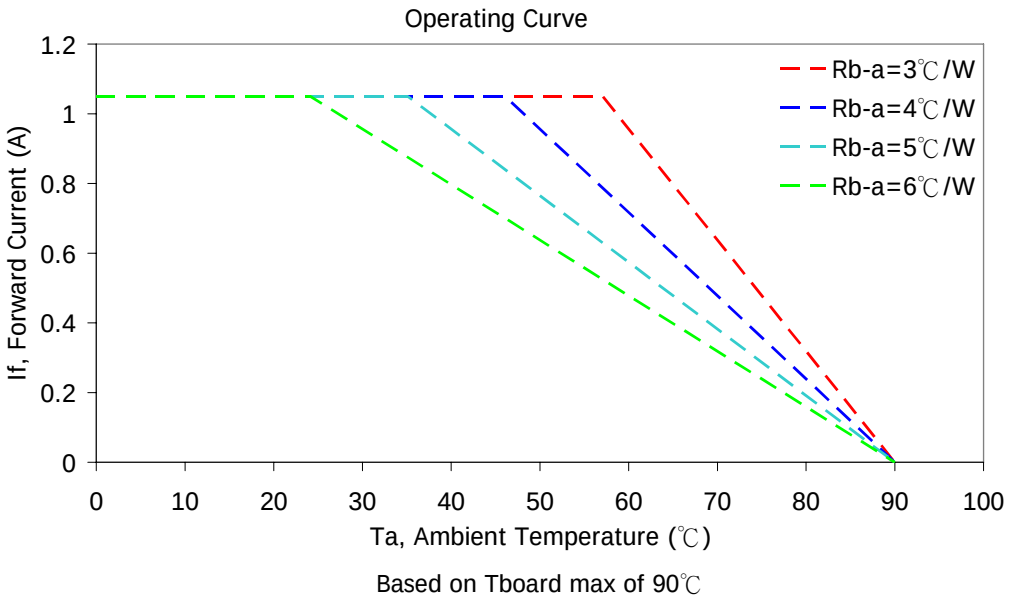
Note1: Lustrous Technology allows a tolerance of each LED for voltage measurements.

Note2: Measurements are taken under each nominal forward current.

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



Operating Curve (Max. permissible forward current)



Based on Tboard max of 90℃

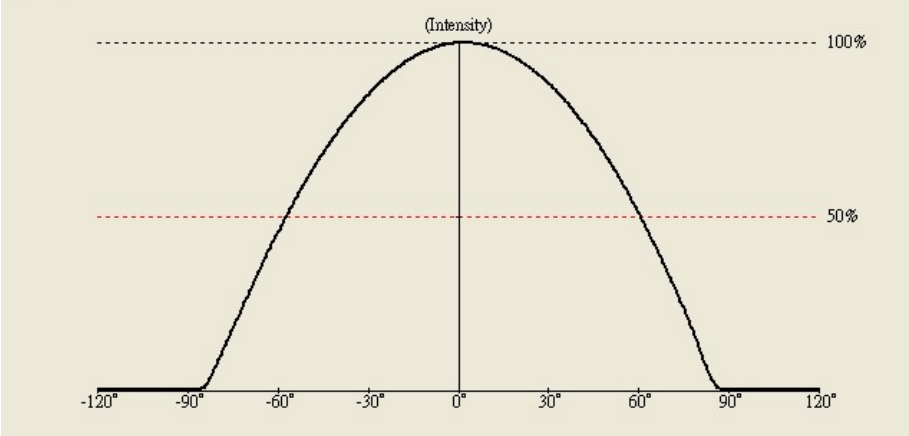
Absolute Maximum Ratings

Table.5

Parameters	For 1050mA forward current
	Warm White / Cool White
DC Forward Current (mA)	1050
Peak Pulsed Forward Current (mA)	1200
LED Junction Temperature (^0C)	< 125
ESD Sensitivity	+/-16000 HBM
Thermal Resistance (^0C/W)	~2.7
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.

Typical Angular Beam Profile, Tj=25 ^{0}C



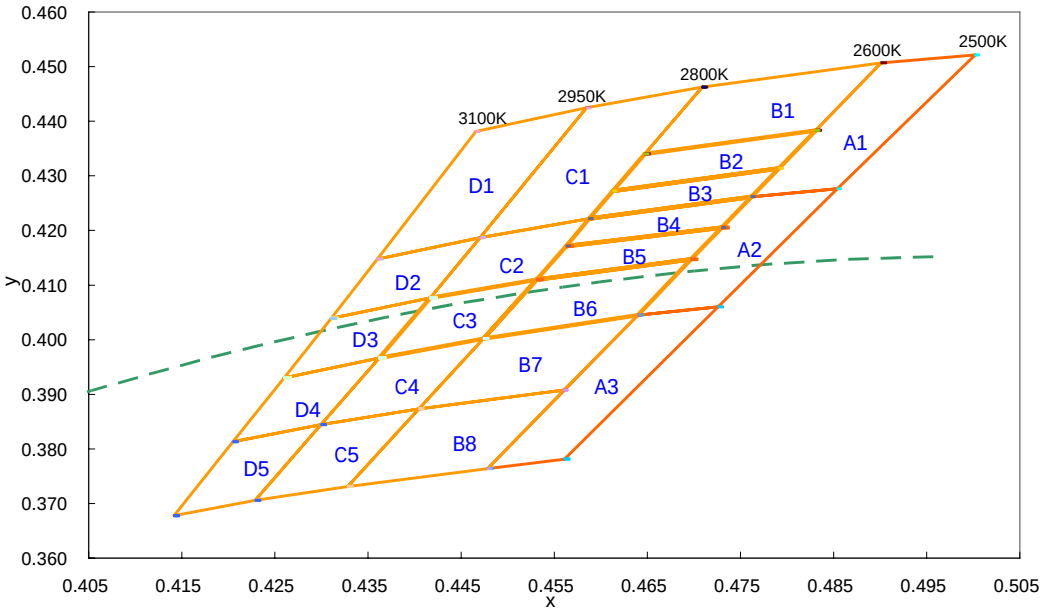
View Angle: 120 degree

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

Bin Code

■ **Warm White (2700K) / NAS110CLC0B (p=2.0mm)**

Warm White Bin Structure



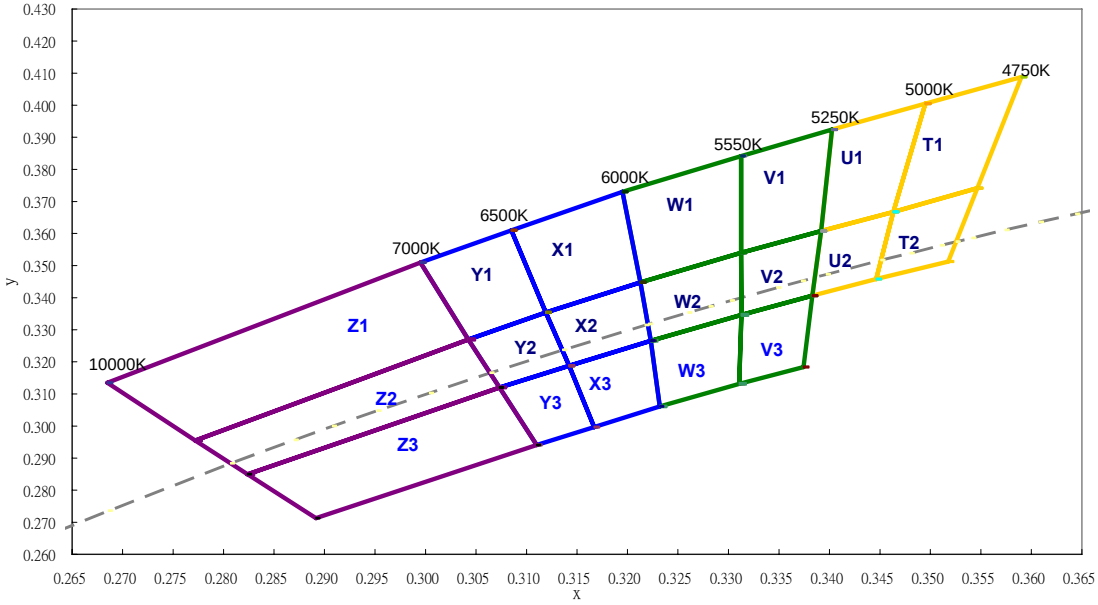
Warm White BIN Table for **NAS110CLC0B-NNFSD**													
NO	BIN CODE	Vf (V)		Lv (lm)		Chromaticity Coordinate (CIE 1931-xy)							
		min	max	min	max	x1	y1	x2	y2	x3	y3	x4	y4
01	V0-A1-A1	9.4	11.5	465	480	0.5002	0.4522	0.4901	0.4507	0.4762	0.4262	0.4854	0.4276
02	V0-A1-A2					0.4854	0.4276	0.4762	0.4262	0.4640	0.4045	0.4726	0.4060
03	V0-A1-A3					0.4726	0.4060	0.4640	0.4045	0.4478	0.3764	0.4561	0.3781
04	V0-A1-B1					0.4901	0.4507	0.4709	0.4463	0.4647	0.4340	0.4831	0.4383
05	V0-A1-B2					0.4831	0.4383	0.4647	0.4340	0.4613	0.4272	0.4791	0.4314
06	V0-A1-B3					0.4791	0.4314	0.4613	0.4272	0.4587	0.4222	0.4762	0.4262

07	V0-A1-B4					0.4762	0.4262	0.4587	0.4222	0.4563	0.4172	0.4730	0.4205
08	V0-A1-B5					0.4730	0.4205	0.4563	0.4172	0.4531	0.4110	0.4697	0.4147
09	V0-A1-B6					0.4698	0.4146	0.4530	0.4109	0.4474	0.4002	0.4640	0.4045
10	V0-A1-B7					0.4640	0.4045	0.4474	0.4002	0.4405	0.3873	0.4560	0.3908
11	V0-A1-B8					0.4560	0.3908	0.4405	0.3873	0.4328	0.3731	0.4478	0.3764
12	V0-A1-C1					0.4709	0.4463	0.4585	0.4425	0.4470	0.4187	0.4587	0.4222
13	V0-A1-C2					0.4587	0.4222	0.4470	0.4187	0.4416	0.4075	0.4530	0.4109
14	V0-A1-C3					0.4530	0.4109	0.4416	0.4075	0.4362	0.3967	0.4474	0.4002
15	V0-A1-C4					0.4474	0.4002	0.4362	0.3967	0.4300	0.3845	0.4405	0.3873
16	V0-A1-C5					0.4405	0.3873	0.4300	0.3845	0.4229	0.3706	0.4328	0.3731
17	V0-A1-D1					0.4585	0.4425	0.4466	0.4382	0.4360	0.4148	0.4470	0.4187
18	V0-A1-D2					0.4470	0.4187	0.4360	0.4148	0.4310	0.4038	0.4416	0.4075
19	V0-A1-D3					0.4416	0.4075	0.4310	0.4038	0.4260	0.3930	0.4362	0.3967
20	V0-A1-D4					0.4362	0.3967	0.4260	0.3930	0.4205	0.3813	0.4300	0.3845
21	V0-A1-D5					0.4300	0.3845	0.4205	0.3813	0.4142	0.3678	0.4229	0.3706
22	V0-A2-A1			480	560	0.5002	0.4522	0.4901	0.4507	0.4762	0.4262	0.4854	0.4276
23	V0-A2-A2					0.4854	0.4276	0.4762	0.4262	0.4640	0.4045	0.4726	0.4060
24	V0-A2-A3					0.4726	0.4060	0.4640	0.4045	0.4478	0.3764	0.4561	0.3781
25	V0-A2-B1					0.4901	0.4507	0.4709	0.4463	0.4647	0.4340	0.4831	0.4383
26	V0-A2-B2					0.4831	0.4383	0.4647	0.4340	0.4613	0.4272	0.4791	0.4314
27	V0-A2-B3					0.4791	0.4314	0.4613	0.4272	0.4587	0.4222	0.4762	0.4262
28	V0-A2-B4					0.4762	0.4262	0.4587	0.4222	0.4563	0.4172	0.4730	0.4205
29	V0-A2-B5					0.4730	0.4205	0.4563	0.4172	0.4531	0.4110	0.4697	0.4147

30	V0-A2-B6					0.4698	0.4146	0.4530	0.4109	0.4474	0.4002	0.4640	0.4045
31	V0-A2-B7					0.4640	0.4045	0.4474	0.4002	0.4405	0.3873	0.4560	0.3908
32	V0-A2-B8					0.4560	0.3908	0.4405	0.3873	0.4328	0.3731	0.4478	0.3764
33	V0-A2-C1					0.4709	0.4463	0.4585	0.4425	0.4470	0.4187	0.4587	0.4222
34	V0-A2-C2					0.4587	0.4222	0.4470	0.4187	0.4416	0.4075	0.4530	0.4109
35	V0-A2-C3					0.4530	0.4109	0.4416	0.4075	0.4362	0.3967	0.4474	0.4002
36	V0-A2-C4					0.4474	0.4002	0.4362	0.3967	0.4300	0.3845	0.4405	0.3873
37	V0-A2-C5					0.4405	0.3873	0.4300	0.3845	0.4229	0.3706	0.4328	0.3731
38	V0-A2-D1					0.4585	0.4425	0.4466	0.4382	0.4360	0.4148	0.4470	0.4187
39	V0-A2-D2					0.4470	0.4187	0.4360	0.4148	0.4310	0.4038	0.4416	0.4075
40	V0-A2-D3					0.4416	0.4075	0.4310	0.4038	0.4260	0.3930	0.4362	0.3967
41	V0-A2-D4					0.4362	0.3967	0.4260	0.3930	0.4205	0.3813	0.4300	0.3845
42	V0-A2-D5					0.4300	0.3845	0.4205	0.3813	0.4142	0.3678	0.4229	0.3706

■ **Cool White (5700K) / NAS110NWC0B (p=2.0mm)**

Cool White Bin Structure

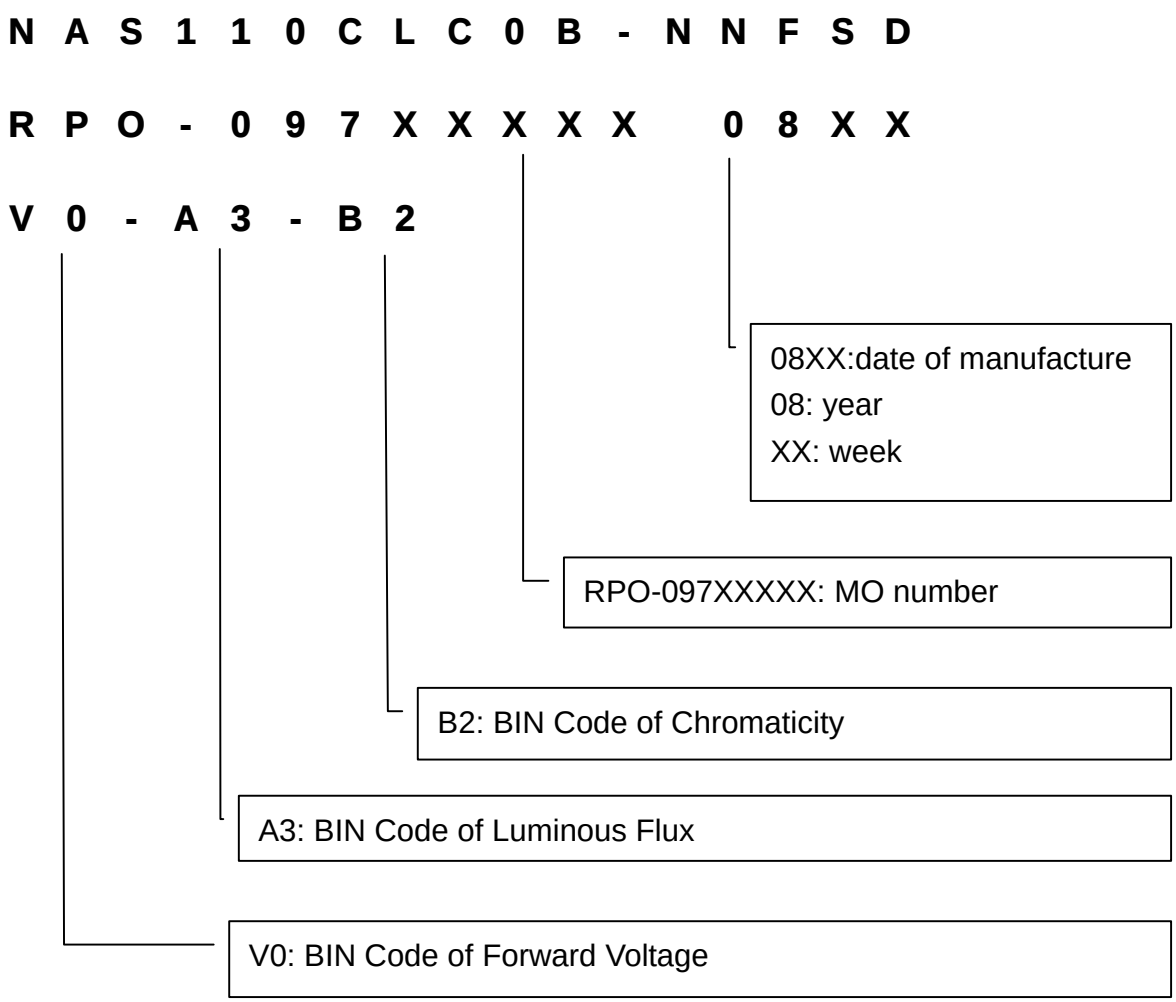


Cool White BIN Table for **NAS110NWC0B-NNFSD**													
NO	BIN CODE	Vf (V)		Lv (lm)		Chromaticity Coordinate (CIE 1931-xy)							
		min	max	min	max	x1	y1	x2	y2	x3	y3	x4	y4
01	V0-A3-T1	9.4	11.5	480	520	0.3590	0.4088	0.3546	0.3741	0.3463	0.3667	0.3495	0.4005
02	V0-A3-T2					0.3546	0.3741	0.3518	0.3513	0.3446	0.3458	0.3463	0.3667
03	V0-A3-U1					0.3495	0.4005	0.3463	0.3667	0.3392	0.3608	0.3403	0.3924
04	V0-A3-U2					0.3463	0.3667	0.3446	0.3458	0.3383	0.3406	0.3392	0.3608
05	V0-A3-V1					0.3403	0.3924	0.3392	0.3608	0.3313	0.3540	0.3313	0.3841
06	V0-A3-V2					0.3392	0.3608	0.3383	0.3406	0.3313	0.3346	0.3313	0.3540

07	V0-A3-V3					0.3383	0.3406	0.3374	0.3184	0.3311	0.3132	0.3313	0.3346
08	V0-A3-W1					0.3313	0.3841	0.3312	0.3540	0.3213	0.3448	0.3195	0.3730
09	V0-A3-W2					0.3313	0.3540	0.3313	0.3346	0.3223	0.3266	0.3213	0.3448
10	V0-A3-W3					0.3313	0.3346	0.3311	0.3132	0.3232	0.3061	0.3223	0.3266
11	V0-A3-X1					0.3195	0.3730	0.3213	0.3448	0.3119	0.3354	0.3085	0.3610
12	V0-A3-X2					0.3213	0.3448	0.3223	0.3266	0.3142	0.3188	0.3119	0.3354
13	V0-A3-X3					0.3223	0.3266	0.3232	0.3061	0.3167	0.2997	0.3142	0.3188
14	V0-A3-Y1					0.3085	0.3610	0.3119	0.3354	0.3042	0.3270	0.2995	0.3510
15	V0-A3-Y2					0.3119	0.3354	0.3142	0.3188	0.3073	0.3120	0.3042	0.3270
16	V0-A3-Y3					0.3142	0.3188	0.3167	0.2997	0.3110	0.2941	0.3073	0.3120
17	V0-A3-Z1					0.2995	0.3510	0.3042	0.3270	0.2772	0.2955	0.2685	0.3135
18	V0-A3-Z2					0.3042	0.3270	0.3073	0.3120	0.2824	0.2850	0.2772	0.2955
19	V0-A3-Z3					0.3073	0.3120	0.3110	0.2941	0.2892	0.2713	0.2824	0.2850
20	V0-A4-T1			520	600	0.3590	0.4088	0.3546	0.3741	0.3463	0.3667	0.3495	0.4005
21	V0-A4-T2					0.3546	0.3741	0.3518	0.3513	0.3446	0.3458	0.3463	0.3667
22	V0-A4-U1					0.3495	0.4005	0.3463	0.3667	0.3392	0.3608	0.3403	0.3924
23	V0-A4-U2					0.3463	0.3667	0.3446	0.3458	0.3383	0.3406	0.3392	0.3608
24	V0-A4-V1					0.3403	0.3924	0.3392	0.3608	0.3313	0.3540	0.3313	0.3841
25	V0-A4-V2					0.3392	0.3608	0.3383	0.3406	0.3313	0.3346	0.3313	0.3540
26	V0-A4-V3					0.3383	0.3406	0.3374	0.3184	0.3311	0.3132	0.3313	0.3346
27	V0-A4-W1					0.3313	0.3841	0.3312	0.3540	0.3213	0.3448	0.3195	0.3730
28	V0-A4-W2					0.3313	0.3540	0.3313	0.3346	0.3223	0.3266	0.3213	0.3448
29	V0-A4-W3					0.3313	0.3346	0.3311	0.3132	0.3232	0.3061	0.3223	0.3266

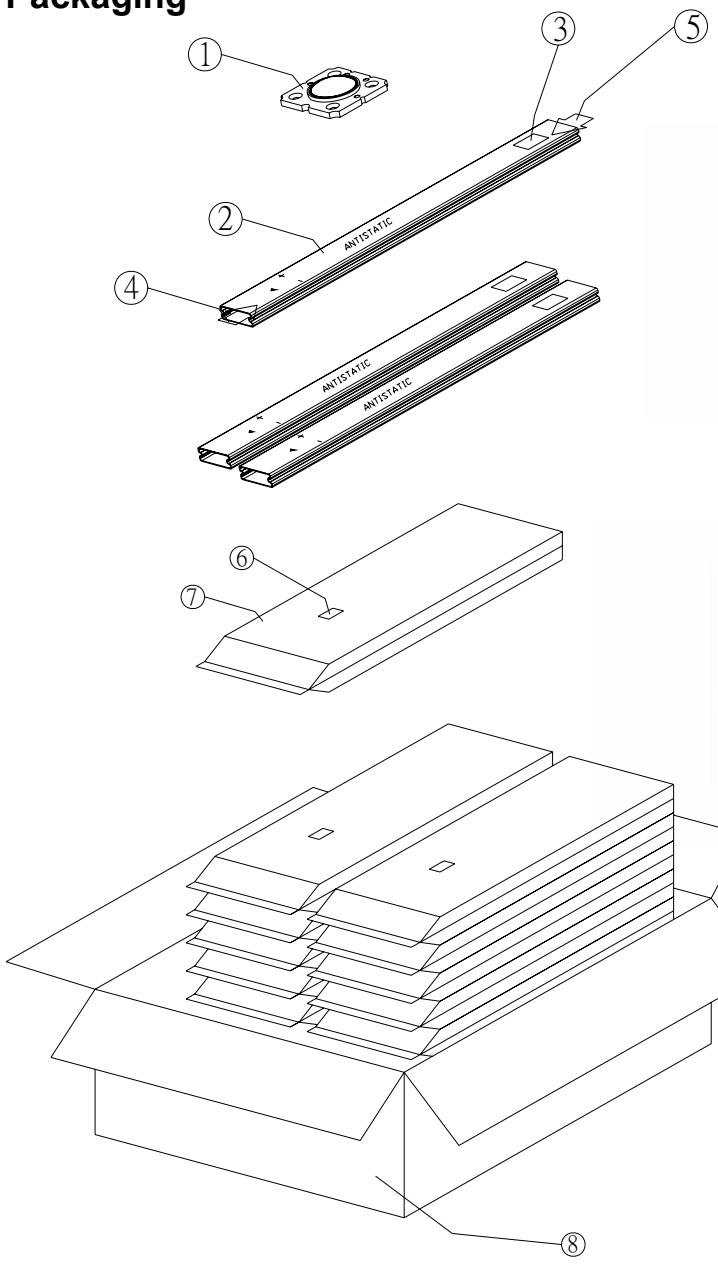
30	V0-A4-X1					0.3195	0.3730	0.3213	0.3448	0.3119	0.3354	0.3085	0.3610
31	V0-A4-X2					0.3213	0.3448	0.3223	0.3266	0.3142	0.3188	0.3119	0.3354
32	V0-A4-X3					0.3223	0.3266	0.3232	0.3061	0.3167	0.2997	0.3142	0.3188
33	V0-A4-Y1					0.3085	0.3610	0.3119	0.3354	0.3042	0.3270	0.2995	0.3510
34	V0-A4-Y2					0.3119	0.3354	0.3142	0.3188	0.3073	0.3120	0.3042	0.3270
35	V0-A4-Y3					0.3142	0.3188	0.3167	0.2997	0.3110	0.2941	0.3073	0.3120
36	V0-A4-Z1					0.2995	0.3510	0.3042	0.3270	0.2772	0.2955	0.2685	0.3135
37	V0-A4-Z2					0.3042	0.3270	0.3073	0.3120	0.2824	0.2850	0.2772	0.2955
38	V0-A4-Z3					0.3073	0.3120	0.3110	0.2941	0.2892	0.2713	0.2824	0.2850

Print Code


N A S 1 1 0 C L C 0 B - N N F S D
R P O - 0 9 7 X X X X X 0 8 X X
V 0 - A 3 - B 2
08XX:date of manufacture
08: year
XX: week
RPO-097XXXXX: MO number
B2: BIN Code of Chromaticity
A3: BIN Code of Luminous Flux
V0: BIN Code of Forward Voltage

Typical Packaging

正



ITEM	DESCRIPTION
①	LUSTRON X^{NLB}
②	PLASTIC TUBE
③	ADHESIVE MAIN LABEL
④	END-PLUG WHITE
⑤	END-PLUG BLACK
⑥	ADHESIVE MAIN LABEL
⑦	ALUMINUM MOISTURE BARRIER BAG
⑧	BOX

STACKING METHOD	
PROD NO. / STACKING METHOD	LUSTRON X^{NLB}
PCS/TUB	10
TUB/BUNDLE	2
PCS/BOX	600 (20 x 30)

Precaution for Use

Over-current Proof

1. Customer must not drive the LEDs with reverse current and should apply resistors for extra protection.
2. When driving the products, the clamp voltage must be set at **12V** 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 < 25°C
   - Relative Humidity < 90% RH
   - Please re-seal the MBB when storing longer then 3 weeks.
   - The products should be used within half of a year.
3. Storage Condition (after opening the MBB):
   - Storage Temperature < 25°C
   - Relative Humidity < 60% RH
   - The products should be used (assembled) within 24 hours after opening the MMB. Otherwise, the pre-curing process as follow is required.
   - Pre-curing process: 60±5℃ for 24 hours.

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.

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Green Technology of Lightings

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