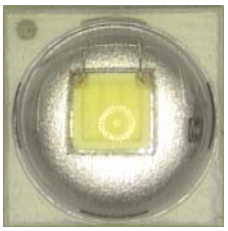
Acriche
semiconductor eco lighting

SEOUL SEMICONDUCTOR

Z5 Series

Binning & Labeling



Features

- Super high Flux output and high Luminance
- Designed for high current operation
- SMT solderable
- Lead Free product
- RoHS compliant

Description

The Z-Power series is designed for high current operation and high flux output applications.
It incorporates state of the art SMD design and low thermal resistant material.
The Z Power LED is ideal light sources for general illumination applications, custom designed solutions, automotive, large LCD backlights and high performance torches.

Applications

- Mobile phone flash
- Automotive interior / exterior lighting
- Automotive signal lighting
- Automotive forward lighting
- General Torch
- Architectural lighting
- LCD TV / Monitor Backlight
- Projector light source
- Traffic signals
- Task lighting
- Decorative / Pathway lighting
- Remote / Solar powered lighting

Contents

* The appearance and specifications of the product can be changed for improvement without notice.

Full Code of Z-Power LED Series

Full code form : $X_1X_2X_3X_4 - X_5X_6 - X_7X_8 - X_9X_{10}$

1. Part Number

- **X_1** : Company
- **X_2X_3** : Package type
- **X_4** : Z-Power LED series

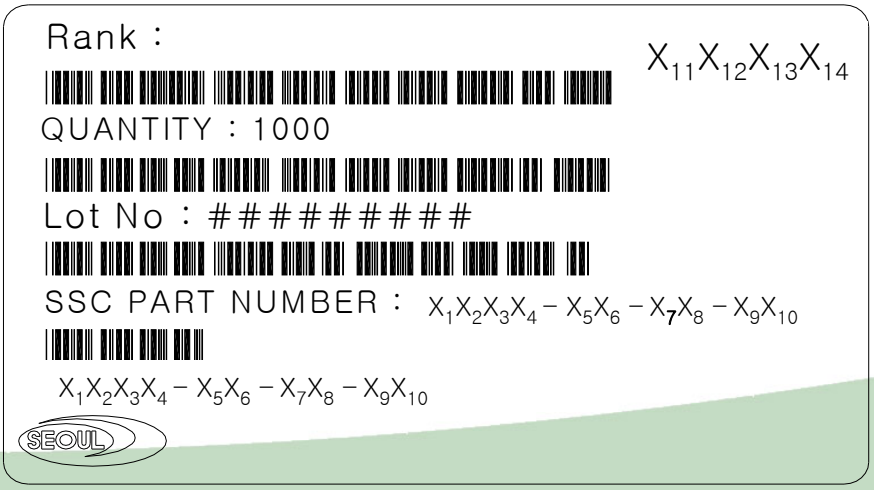
2. Inter Number

- **X_5 X_6** : Revision No.
- **X_7 X_8** : Color
  - W0 : Pure White
  - WN : Neutral White
  - WW : Warm White
- **X_9 X_{10}** : Character
  - C8 : CRI80
  - C9 : CRI90

3. Code Labeling

- **X_{11}** : Flux
- **$X_{12}X_{13}$** : Color (CIE x, y)
- **X_{14}** : Forward Voltage

3. Sticker Diagram on Reel & Aluminum Vinyl Bag



Code Labeling

1. Flux Bins

1-1. Luminous flux bin structure for pure white, warm white, neutral white, blue , green, amber and red Z5 Package.

Bin Code		Luminous Flux [lm]
K		8.5 ~ 11.0
L		11.0 ~ 14.5
M		14.5 ~ 19.0
O		19.0 ~ 24.5
P		24.5 ~ 32.0
Q		32.0 ~ 41.5
R		41.5 ~ 54.0
S		54.0 ~ 70.0
T	T1	70.0 ~ 80.0
	T2	80.0 ~ 91.0
U	U1	91.0 ~ 100.0
	U2	100.0 ~ 109.0
	U3	109.0 ~ 118.5
V	V1	118.5 ~ 130.0
	V2	130.0 ~ 140.0
	V3	140.0 ~ 154.0
W		154.0 ~ 200.0

Tolerance : ± 10% of Luminous flux value

2. Color Bins

Z5 packages are tested and binned for dominant wavelength (blue, green, amber, red) or x,y coordinates (pure, warm, neutral white)

2-1. Blue, Green, Amber, Red

Bin Code	Color	Dominant Wavelength [nm]	
		Min	Max
BB1	Blue	455	460
BB2		460	465
BB3		465	470
BB4		470	475
GG1	Green	520	525
GG2		525	530
GG3		530	535
AA1	Amber	585	587.5
AA2		587.5	590
AA3		590	592.5
AA4		592.5	595
RR1	Red	618	625
RR2		625	632

Tolerance

Dominant wavelength : ± 0.5 nm

2-2. Pure White CIE

Pure white product tested and binned by x,y coordinates and CCT

<IF=350mA, Ta=25℃>

	CIE X	CIE Y		CIE X	CIE Y
Z8	0.2969	0.2919	Z9	0.3025	0.2985
	0.2988	0.2860		0.3042	0.2922
	0.3042	0.2922		0.3096	0.2980
	0.3025	0.2985		0.3082	0.3046
	0.2969	0.2919		0.3025	0.2985
Z6	0.2950	0.2980	Z7	0.3009	0.3047
	0.2969	0.2919		0.3025	0.2985
	0.3025	0.2985		0.3082	0.3046
	0.3009	0.3047		0.3068	0.3113
	0.2950	0.2980		0.3009	0.3047
Z4	0.2930	0.3037	Z5	0.2993	0.3107
	0.2950	0.2980		0.3009	0.3047
	0.3009	0.3047		0.3068	0.3113
	0.2993	0.3107		0.3055	0.3177
	0.2930	0.3037		0.2993	0.3107
Z2	0.2910	0.3093	Z3	0.2976	0.3166
	0.2930	0.3037		0.2993	0.3107
	0.2993	0.3107		0.3055	0.3177
	0.2976	0.3166		0.3041	0.3240
	0.2910	0.3093		0.2976	0.3166
			Z1	0.2959	0.3227
				0.2976	0.3166
				0.3041	0.3240
				0.3028	0.3304
				0.2959	0.3227

* Measurement Uncertainty of the Color Coordinates : ± 0.01

<IF=350mA, Ta=25℃>

	CIE X	CIE Y		CIE X	CIE Y
A8	0.3082	0.3046	A9	0.3155	0.3120
	0.3096	0.2980		0.3164	0.3046
	0.3164	0.3046		0.3230	0.3110
	0.3155	0.3120		0.3225	0.3190
	0.3082	0.3046		0.3155	0.3120
A6	0.3068	0.3113	A7	0.3146	0.3187
	0.3082	0.3046		0.3155	0.3120
	0.3155	0.3120		0.3225	0.3190
	0.3146	0.3187		0.3221	0.3261
	0.3068	0.3113		0.3146	0.3187
A4	0.3055	0.3177	A5	0.3136	0.3256
	0.3068	0.3113		0.3146	0.3187
	0.3146	0.3187		0.3221	0.3261
	0.3136	0.3256		0.3216	0.3334
	0.3055	0.3177		0.3136	0.3256
A2	0.3041	0.3240	A3	0.3126	0.3324
	0.3055	0.3177		0.3136	0.3256
	0.3136	0.3256		0.3216	0.3334
	0.3126	0.3324		0.3210	0.3408
	0.3041	0.3240		0.3126	0.3324
A0	0.3028	0.3304	A1	0.3115	0.3393
	0.3041	0.3240		0.3126	0.3324
	0.3126	0.3324		0.3210	0.3408
	0.3115	0.3393		0.3205	0.3481
	0.3028	0.3304		0.3115	0.3393

* Measurement Uncertainty of the Color Coordinates : ± 0.01

<IF=350mA, Ta=25℃>

	CIE X	CIE Y		CIE X	CIE Y
B6	0.3222	0.3243	B7	0.3294	0.3306
	0.3226	0.3178		0.3295	0.3234
	0.3295	0.3234		0.3364	0.3288
	0.3294	0.3306		0.3366	0.3369
	0.3222	0.3243		0.3294	0.3306
B4	0.3217	0.3316	B5	0.3293	0.3384
	0.3222	0.3243		0.3294	0.3306
	0.3294	0.3306		0.3366	0.3369
	0.3293	0.3384		0.3369	0.3451
	0.3217	0.3316		0.3293	0.3384
B2	0.3212	0.3389	B3	0.3293	0.3461
	0.3217	0.3316		0.3293	0.3384
	0.3293	0.3384		0.3369	0.3451
	0.3293	0.3461		0.3373	0.3534
	0.3212	0.3389		0.3293	0.3461
B0	0.3207	0.3462	B1	0.3292	0.3539
	0.3212	0.3389		0.3293	0.3461
	0.3293	0.3461		0.3373	0.3534
	0.3292	0.3539		0.3376	0.3616
	0.3207	0.3462		0.3292	0.3539
B8	0.3200	0.3572	B9	0.3290	0.3656
	0.3207	0.3462		0.3292	0.3539
	0.3292	0.3539		0.3376	0.3616
	0.3290	0.3656		0.3381	0.3740
	0.3200	0.3572		0.3290	0.3656

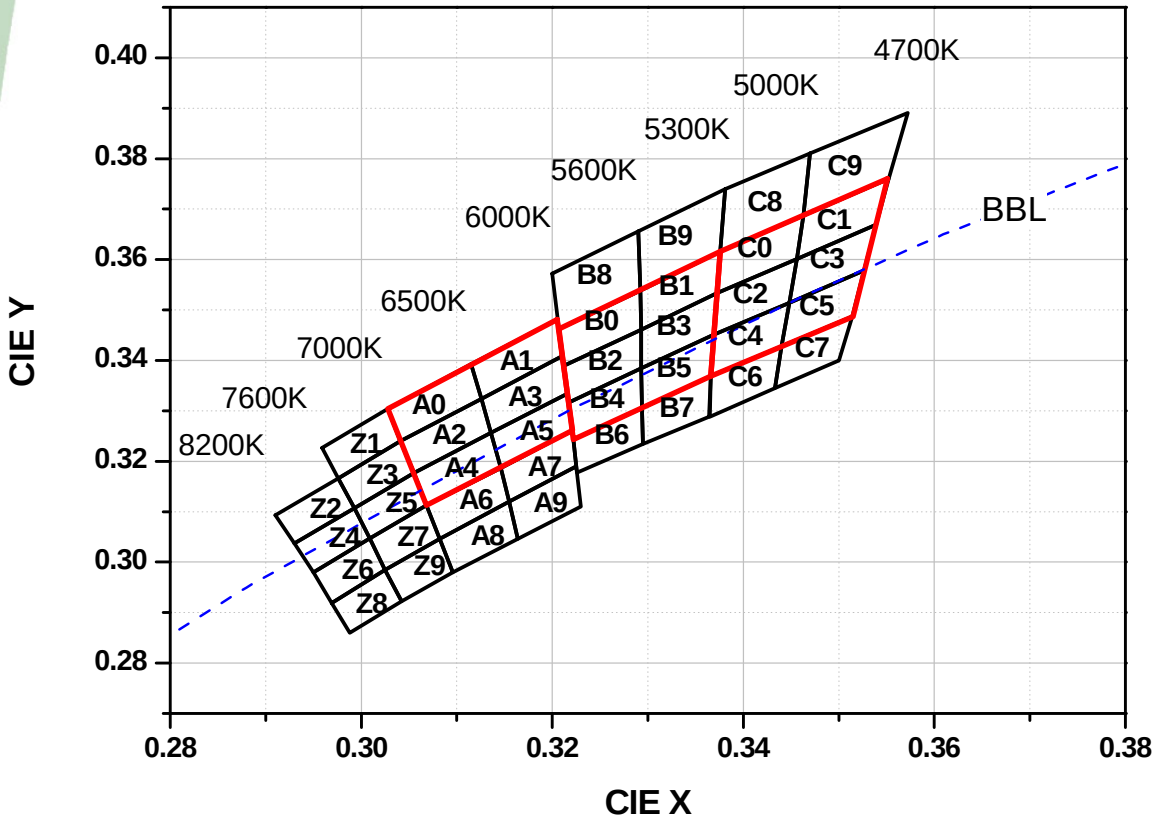
* Measurement Uncertainty of the Color Coordinates : ± 0.01

<IF=350mA, Ta=25℃>

	CIE X	CIE Y		CIE X	CIE Y
C6	0.3366	0.3369	C7	0.3440	0.3428
	0.3364	0.3288		0.3433	0.3345
	0.3433	0.3345		0.3500	0.3400
	0.3440	0.3428		0.3514	0.3487
	0.3366	0.3369		0.3440	0.3428
C4	0.3369	0.3451	C5	0.3448	0.3514
	0.3366	0.3369		0.3440	0.3428
	0.3440	0.3428		0.3514	0.3487
	0.3448	0.3514		0.3526	0.3578
	0.3369	0.3451		0.3448	0.3514
C2	0.3373	0.3534	C3	0.3456	0.3601
	0.3369	0.3451		0.3448	0.3514
	0.3448	0.3514		0.3526	0.3578
	0.3456	0.3601		0.3539	0.3669
	0.3373	0.3534		0.3456	0.3601
C0	0.3376	0.3616	C1	0.3463	0.3687
	0.3373	0.3534		0.3456	0.3601
	0.3456	0.3601		0.3539	0.3669
	0.3463	0.3687		0.3552	0.3760
	0.3376	0.3616		0.3463	0.3687
C8	0.3381	0.3740	C9	0.3470	0.3810
	0.3470	0.3810		0.3572	0.3891
	0.3463	0.3687		0.3552	0.3760
	0.3376	0.3616		0.3463	0.3687
	0.3381	0.3740		0.3470	0.3810

* Measurement Uncertainty of the Color Coordinates : ± 0.01

-. Pure White binning structure graphical representation



*** Note**

Red area is ANSI Pure White bin.

2-3. Neutral White CIE

Neutral white product tested and binned by x,y coordinates and CCT

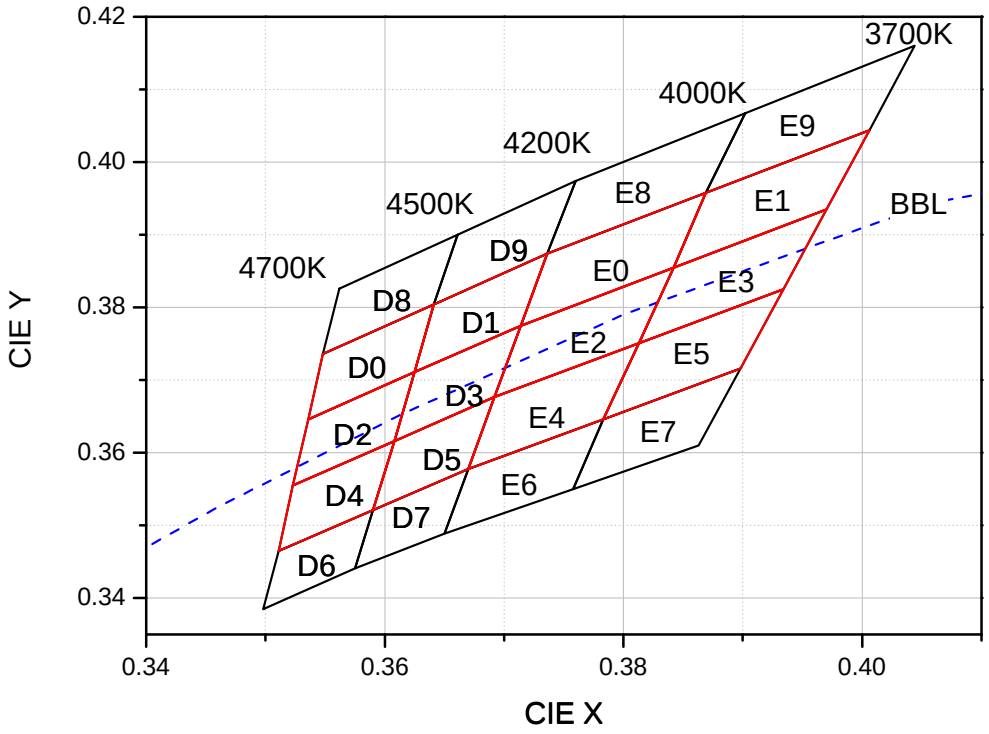
	CIE X	CIE Y		CIE X	CIE Y
D8	0.3562	0.3826	D9	0.3661	0.39
	0.3548	0.3736		0.3641	0.3804
	0.3641	0.3804		0.3736	0.3874
	0.3661	0.39		0.376	0.3974
	0.3562	0.3826		0.3661	0.39
D0	0.3548	0.3736	D1	0.3641	0.3804
	0.3536	0.3646		0.3625	0.3711
	0.3625	0.3711		0.3714	0.3775
	0.3641	0.3804		0.3736	0.3874
	0.3548	0.3736		0.3641	0.3804
D2	0.3536	0.3646	D3	0.3625	0.3711
	0.3523	0.3555		0.3608	0.3616
	0.3608	0.3616		0.3692	0.3677
	0.3625	0.3711		0.3714	0.3775
	0.3536	0.3646		0.3625	0.3711
D4	0.3523	0.3555	D5	0.3608	0.3616
	0.3511	0.3465		0.359	0.3521
	0.359	0.3521		0.367	0.3578
	0.3608	0.3616		0.3692	0.3677
	0.3523	0.3555		0.3608	0.3616
D6	0.3511	0.3465	D7	0.359	0.3521
	0.3498	0.3385		0.3575	0.3441
	0.3575	0.3441		0.365	0.3489
	0.359	0.3521		0.367	0.3578
	0.3511	0.3465		0.359	0.3521

* Measurement Uncertainty of the Color Coordinates : ± 0.01

	CIE X	CIE Y		CIE X	CIE Y
E8	0.376	0.3974	E9	0.3902	0.4067
	0.3736	0.3874		0.3869	0.3958
	0.3869	0.3958		0.4006	0.4044
	0.3902	0.4067		0.4044	0.416
	0.376	0.3974		0.3902	0.4067
E0	0.3736	0.3874	E1	0.3869	0.3958
	0.3714	0.3775		0.3842	0.3855
	0.3841	0.3855		0.397	0.3935
	0.3869	0.3958		0.4006	0.4044
	0.3736	0.3874		0.3869	0.3958
E2	0.3714	0.3775	E3	0.3842	0.3855
	0.3692	0.3677		0.3813	0.3751
	0.3813	0.3751		0.3934	0.3825
	0.3842	0.3855		0.397	0.3935
	0.3714	0.3775		0.3842	0.3855
E4	0.3692	0.3677	E5	0.3813	0.3751
	0.367	0.3578		0.3783	0.3646
	0.3783	0.3646		0.3898	0.3716
	0.3813	0.3751		0.3934	0.3825
	0.3692	0.3677		0.3813	0.3751
E6	0.367	0.3578	E7	0.3783	0.3646
	0.365	0.3489		0.3758	0.355
	0.3758	0.355		0.3863	0.361
	0.3783	0.3646		0.3898	0.3716
	0.367	0.3578		0.3783	0.3646

* Measurement Uncertainty of the Color Coordinates : ± 0.01

-. Neutral White binning structure graphical representation



*** Note**

Red area is ANSI Neutral White bin.

2-4. Warm White CIE

Warm white product tested and binned by x,y coordinates and CCT

	CIE X	CIE Y		CIE X	CIE Y
F8	0.4037	0.414	F9	0.4197	0.4217
	0.3996	0.4015		0.4146	0.4089
	0.4146	0.4089		0.4299	0.4165
	0.4197	0.4217		0.4354	0.4288
	0.4037	0.414		0.4197	0.4217
F0	0.3996	0.4015	F1	0.4146	0.4089
	0.396	0.3907		0.4104	0.3978
	0.4104	0.3978		0.4248	0.4048
	0.4146	0.4089		0.4299	0.4165
	0.3996	0.4015		0.4146	0.4089
F2	0.396	0.3907	F3	0.4104	0.3978
	0.3925	0.3798		0.4062	0.3865
	0.4062	0.3865		0.4198	0.3931
	0.4104	0.3978		0.4248	0.4048
	0.396	0.3907		0.4104	0.3978
F4	0.3925	0.3798	F5	0.4062	0.3865
	0.3889	0.369		0.4017	0.3751
	0.4017	0.3751		0.4147	0.3814
	0.4062	0.3865		0.4198	0.3931
	0.3925	0.3798		0.4062	0.3865
F6	0.3889	0.369	F7	0.4017	0.3751
	0.386	0.36		0.3983	0.366
	0.3983	0.366		0.4104	0.3715
	0.4017	0.3751		0.4147	0.3814
	0.3889	0.369		0.4017	0.3751

* Measurement Uncertainty of the Color Coordinates : ± 0.01

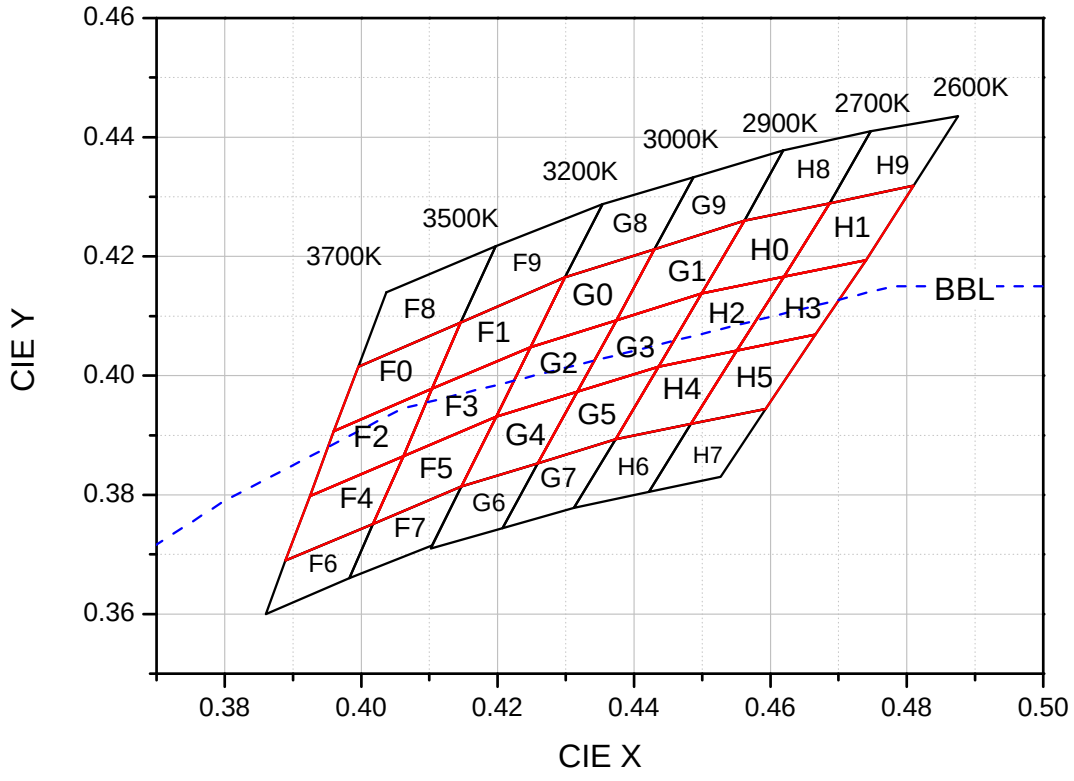
	CIE X	CIE Y		CIE X	CIE Y
G8	0.4354	0.4288	G9	0.4487	0.4333
	0.4299	0.4165		0.443	0.4212
	0.443	0.4212		0.4562	0.426
	0.4487	0.4333		0.4619	0.4378
	0.4354	0.4288		0.4487	0.4333
G0	0.4299	0.4165	G1	0.443	0.4212
	0.4248	0.4048		0.4374	0.4093
	0.4374	0.4093		0.4499	0.4138
	0.443	0.4212		0.4562	0.426
	0.4299	0.4165		0.443	0.4212
G2	0.4248	0.4048	G3	0.4374	0.4093
	0.4198	0.3931		0.4317	0.3973
	0.4317	0.3973		0.4436	0.4015
	0.4374	0.4093		0.4499	0.4138
	0.4248	0.4048		0.4374	0.4093
G4	0.4198	0.3931	G5	0.4317	0.3973
	0.4147	0.3814		0.4259	0.3853
	0.4259	0.3853		0.4373	0.3893
	0.4317	0.3973		0.4436	0.4015
	0.4198	0.3931		0.4317	0.3973
G6	0.4147	0.3814	G7	0.4259	0.3853
	0.4102	0.371		0.4207	0.3744
	0.4207	0.3744		0.4312	0.3778
	0.4259	0.3853		0.4373	0.3893
	0.4147	0.3814		0.4259	0.3853

* Measurement Uncertainty of the Color Coordinates : ± 0.01

	CIE X	CIE Y		CIE X	CIE Y
H8	0.4619	0.4378	H9	0.4747	0.441
	0.4562	0.426		0.4687	0.4289
	0.4687	0.4289		0.481	0.4319
	0.4747	0.441		0.4875	0.4435
	0.4619	0.4378		0.4747	0.441
H0	0.4562	0.426	H1	0.4687	0.4289
	0.4499	0.4138		0.462	0.4166
	0.462	0.4166		0.474	0.4194
	0.4687	0.4289		0.481	0.4319
	0.4562	0.426		0.4687	0.4289
H2	0.4499	0.4138	H3	0.462	0.4166
	0.4436	0.4015		0.4551	0.4042
	0.4551	0.4042		0.4666	0.4069
	0.462	0.4166		0.474	0.4194
	0.4499	0.4138		0.462	0.4166
H4	0.4436	0.4015	H5	0.4551	0.4042
	0.4373	0.3893		0.4483	0.3919
	0.4483	0.3919		0.4593	0.3944
	0.4551	0.4042		0.4666	0.4069
	0.4436	0.4015		0.4551	0.4042
H6	0.4373	0.3893	H7	0.4483	0.3919
	0.4312	0.3778		0.4422	0.3805
	0.4422	0.3805		0.4527	0.383
	0.4483	0.3919		0.4593	0.3944
	0.4373	0.3893		0.4483	0.3919

* Measurement Uncertainty of the Color Coordinates : ± 0.01

-. Warm White binning structure graphical representation



*** Note**

Red area is ANSI Warm White bin.

3. Forward Voltage Bins

Bin code	Forward Voltage [V]
D	2.00 ~ 2.25
E	2.25 ~ 2.50
F	2.50 ~ 2.75
G	2.75 ~ 3.00
H	3.00 ~ 3.25
I	3.25 ~ 3.50
J	3.50 ~ 3.75
K	3.75 ~ 4.00

If you have any question, please feel free to contact us.

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