

# LH351A – 3535 Ceramic LED @25°C



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## SAMSUNG ELECTRONICS

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# 1. Product Code Information

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
S	P	H	W	H	T	L	3	D	3	0	3	E	6	R	0	H	5

Code			PKG information	Specification					
1	2	3	Samsung Package High Power						
4	5	Color	WH	White					
6	Product Version								
7	8	Product	L3	CR35H					
9	Lens type		D	Dome Lens					
10	Operating condition		3	Max 3 Watt					
11	Not defined		0	Default					
12	CRI	3	Min. 70+						
		4	Min. 75+						
		5	Min. 80+						
		7	Min. 90+						
13	14	V <sub>F</sub>	E1	2.7~2.8 V	E3	E6			
			F1	2.8~2.9 V					
			G1	2.9~3.0 V					
			H1	3.0~3.1 V	H3				
			J1	3.1~3.2 V					
			K1	3.2~3.3 V					
15	16	CCT	W0	2700K					
			V0	3000K					
			U0	3500K					
			T0	4000K					
			R0	5000K					
			Q0	5700K					
			P0	6500K					
			N0	7600K					
17	18	Luminous Flux	E1	80~90 lm	E8 <sup>1)</sup>				
			F1	90~100 lm		F7			
			G1	100~110 lm			G6		
			H1	110~120 lm				H5	
			J1	120~130 lm					J4
			K1	130~140 lm					
			M1	140~150 lm					
			N1	150~160 lm					
1) Digit 17 : Min. spec. Digit 18 : The number of high bin rank from Min. spec. Ex) F1 = 90~100 lm, F7 = 90~160 lm									



## 2. Luminous Flux Bins ( $T_j = 25^\circ\text{C}$ )

Nominal CCT	Product Code	Flux Rank	Sorting Condition Flux @350mA	
			Flux Bin	Flux Range
2700K	SPHWHTL3D305E6W0G4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6W0H3	H3	H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6WUG4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6WUH3	H3	H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6WPG4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6WPH3	H3	H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6WMG4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
K1			130 ~ 140	
SPHWHTL3D305E6WMH3	H3	H1	110 ~ 120	
		J1	120 ~ 130	
		K1	130 ~ 140	

## 2. Luminous Flux Bins ( $T_j = 25^\circ\text{C}$ ) (Continued)

Nominal CCT	Product Code	Flux Rank	Sorting Condition Flux @350mA	
			Flux Bin	Flux Range
2700K	SPHWHTL3D307E6W0E6	E6	E1	80 ~ 90
			F1	90 ~ 100
			G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D307E6W0F5	F5	F1	90 ~ 100
			G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D307E6W0G4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D307E6WUE6	E6	E1	80 ~ 90
			F1	90 ~ 100
			G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D307E6WUF5	F5	F1	90 ~ 100
			G1	100 ~ 110
			H1	110 ~ 120
J1			120 ~ 130	
K1			130 ~ 140	
SPHWHTL3D307E6WUG4	G4	G1	100 ~ 110	
		H1	110 ~ 120	
		J1	120 ~ 130	
		K1	130 ~ 140	

## 2. Luminous Flux Bins ( $T_j = 25^\circ\text{C}$ ) (Continued)

Nominal CCT	Product Code	Flux Rank	Sorting Condition Flux @350mA			
			Flux Bin	Flux Range		
2700K	SPHWHTL3D307E6WPE6	E6	E1	80 ~ 90		
			F1	90 ~ 100		
			G1	100 ~ 110		
			H1	110 ~ 120		
			J1	120 ~ 130		
			K1	130 ~ 140		
	SPHWHTL3D307E6WPF5	F5	F1	90 ~ 100		
			G1	100 ~ 110		
			H1	110 ~ 120		
			J1	120 ~ 130		
			K1	130 ~ 140		
	SPHWHTL3D307E6WPG4	G4	G1	100 ~ 110		
			H1	110 ~ 120		
			J1	120 ~ 130		
			K1	130 ~ 140		
	SPHWHTL3D307E6WME6	E6	E1	80 ~ 90		
			F1	90 ~ 100		
			G1	100 ~ 110		
			H1	110 ~ 120		
			J1	120 ~ 130		
			K1	130 ~ 140		
			SPHWHTL3D307E6WMF5	F5	F1	90 ~ 100
					G1	100 ~ 110
					H1	110 ~ 120
J1					120 ~ 130	
K1	130 ~ 140					
SPHWHTL3D307E6WMG4	G4	G1	100 ~ 110			
		H1	110 ~ 120			
		J1	120 ~ 130			
		K1	130 ~ 140			
3000K	SPHWHTL3D303E6V0H5	H5	H1	110 ~ 120		
			J1	120 ~ 130		
			K1	130 ~ 140		
			M1	140 ~ 150		
	SPHWHTL3D303E6V0J4	J4	J1	120 ~ 130		
			K1	130 ~ 140		
			M1	140 ~ 150		
			N1	150 ~ 160		

## 2. Luminous Flux Bins ( $T_j = 25^\circ\text{C}$ ) (Continued)

Nominal CCT	Product Code	Flux Rank	Sorting Condition Flux @350mA	
			Flux Bin	Flux Range
3000K	SPHWHTL3D303E6V0K3	K3	K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D303E6VPH5	H5	H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D303E6VPJ4	J4	J1	120 ~ 130
			K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D303E6VPK3	K3	K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D305E6V0G4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6V0H3	H3	H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6VUG4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
SPHWHTL3D305E6VUH3	H3	H1	110 ~ 120	
		J1	120 ~ 130	
		K1	130 ~ 140	
SPHWHTL3D305E6VPG4	G4	G1	100 ~ 110	
		H1	110 ~ 120	
		J1	120 ~ 130	
		K1	130 ~ 140	
SPHWHTL3D305E6VPH3	H3	H1	110 ~ 120	
		J1	120 ~ 130	
		K1	130 ~ 140	

## 2. Luminous Flux Bins ( $T_j = 25^\circ\text{C}$ ) (Continued)

Nominal CCT	Product Code	Flux Rank	Sorting Condition Flux @350mA	
			Flux Bin	Flux Range
3000K	SPHWHTL3D305E6VMG4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6VMH3	H3	H1	110 ~ 120
			J1	120 ~ 130
K1			130 ~ 140	
3500K	SPHWHTL3D305E6U0G4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6U0H3	H3	H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6UUG4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6UUH3	H3	H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6UPG4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6UPH3	H3	H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6UMG4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
K1			130 ~ 140	
SPHWHTL3D305E6UMH3	H3	H1	110 ~ 120	
		J1	120 ~ 130	
		K1	130 ~ 140	



## 2. Luminous Flux Bins ( $T_j = 25^\circ\text{C}$ ) (Continued)

Nominal CCT	Product Code	Flux Rank	Sorting Condition Flux @350mA	
			Flux Bin	Flux Range
4000K	SPHWHTL3D303E6T0K3	K3	K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D303E6T0M2	M2	M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D305E6T0G4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6T0H3	H3	H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6T0J2	J2	J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6TUG4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6TUH3	H3	H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6TUJ2	J2	J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6TPG4	G4	G1	100 ~ 110
H1			110 ~ 120	
J1			120 ~ 130	
K1			130 ~ 140	
SPHWHTL3D305E6TPH3	H3	H1	110 ~ 120	
		J1	120 ~ 130	
		K1	130 ~ 140	
SPHWHTL3D305E6TPJ2	J2	J1	120 ~ 130	
		K1	130 ~ 140	



## 2. Luminous Flux Bins ( $T_j = 25^\circ\text{C}$ ) (Continued)

Nominal CCT	Product Code	Flux Rank	Sorting Condition Flux @350mA	
			Flux Bin	Flux Range
4000K	SPHWHTL3D305E6TMG4	G4	G1	100 ~ 110
			H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6TMH3	H3	H1	110 ~ 120
			J1	120 ~ 130
			K1	130 ~ 140
	SPHWHTL3D305E6TMJ2	J2	J1	120 ~ 130
			K1	130 ~ 140
5000K	SPHWHTL3D303E6RTJ4	J4	J1	120 ~ 130
			K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D303E6RTK3	K3	K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D303E6RTM2	M2	M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D304E6RTJ4	J4	J1	120 ~ 130
			K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D304E6RTK3	K3	K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160

## 2. Luminous Flux Bins ( $T_j = 25^\circ\text{C}$ ) (Continued)

Nominal CCT	Product Code	Flux Rank	Sorting Condition Flux @350mA	
			Flux Bin	Flux Range
5700K	SPHWHTL3D303E6QTJ4	J4	J1	120 ~ 130
			K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D303E6QTK3	K3	K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D303E6QTM2	M2	M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D304E6QTJ4	J4	J1	120 ~ 130
			K1	130 ~ 140
			M1	140 ~ 150
N1			150 ~ 160	
SPHWHTL3D304E6QTK3	K3	K1	130 ~ 140	
		M1	140 ~ 150	
		N1	150 ~ 160	
6500K	SPHWHTL3D303E6PTJ4	J4	J1	120 ~ 130
			K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D303E6PTK3	K3	K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
SPHWHTL3D303E6PTM2	M2	M1	140 ~ 150	
		N1	150 ~ 160	
7600K	SPHWHTL3D303E6N0J4	J4	J1	120 ~ 130
			K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160
	SPHWHTL3D303E6N0K3	K3	K1	130 ~ 140
			M1	140 ~ 150
			N1	150 ~ 160



### 3. Color Bins ( $T_j = 25^\circ\text{C}$ )

#### 3-1) Color Binning

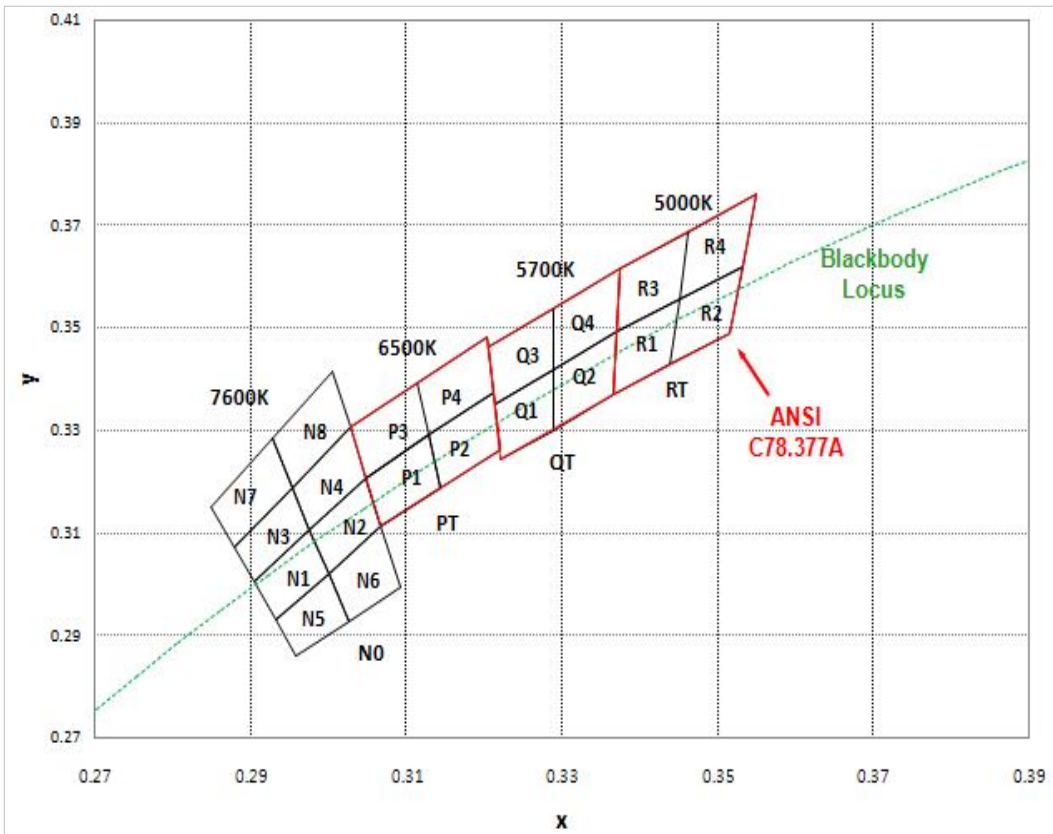
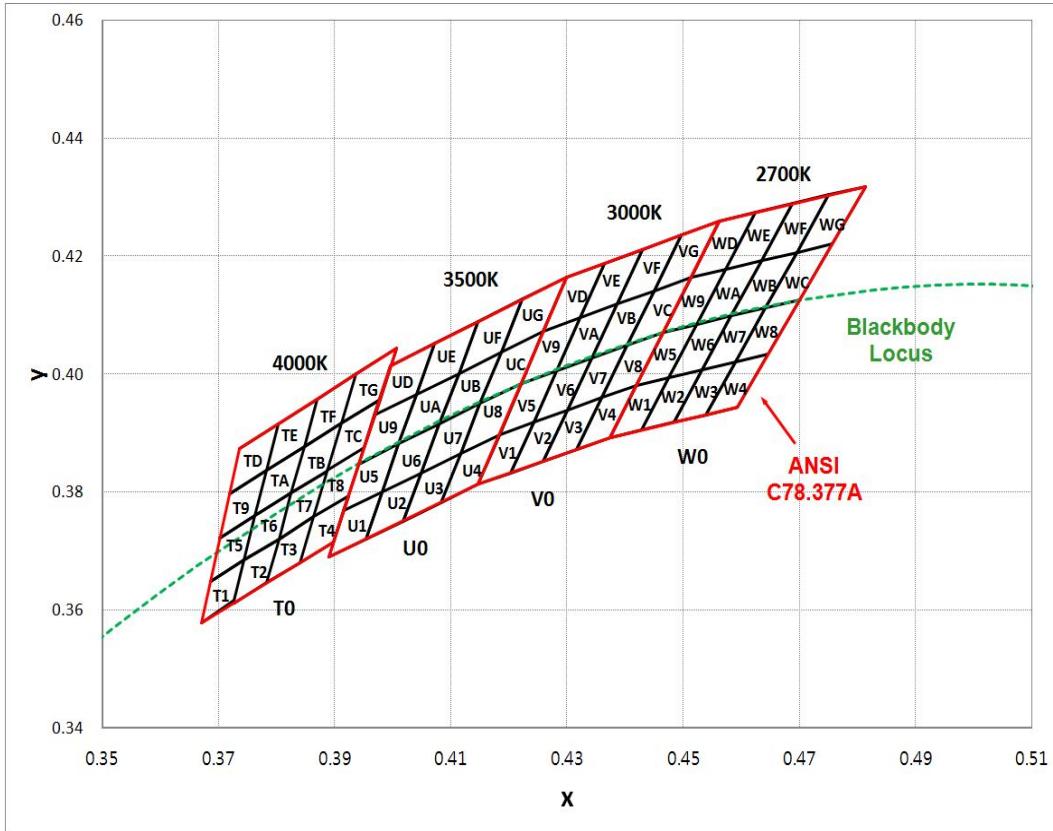
Nominal CCT	Product Code	Color Rank	Chromaticity Bins
2700K	SPHWHTL3D305E6W0G4	W0 (Whole Bin)	W1,W2,W3,W4,W5,W6,W7,W8, W9,WA,WB,WC,WD,WE,WF,WG
	SPHWHTL3D305E6W0H3		
	SPHWHTL3D307E6W0E6		
	SPHWHTL3D307E6W0F5		
	SPHWHTL3D307E6W0G4		
	SPHWHTL3D305E6WUG4	WU (Half Bin)	W5,W6,W7,W8,W9,WA,WB,WC
	SPHWHTL3D305E6WUH3		
	SPHWHTL3D307E6WUE6		
	SPHWHTL3D307E6WUF5		
	SPHWHTL3D307E6WUG4	WP (Quater Bin)	W6,W7,WA,WB
	SPHWHTL3D305E6WPG4		
	SPHWHTL3D305E6WPH3		
	SPHWHTL3D307E6WPE6		
	SPHWHTL3D307E6WPF5		
	SPHWHTL3D307E6WPG4	WM (MacAdam 3-Step)	-
	SPHWHTL3D305E6WMG4		
SPHWHTL3D305E6WMH3			
SPHWHTL3D307E6WME6			
SPHWHTL3D307E6WMF5			
SPHWHTL3D307E6WMG4	3000K	V0 (Whole Bin)	V1,V2,V3,V4,V5,V6,V7,V8, V9,VA,VB,VC,VD,VE,VF,VG
SPHWHTL3D303E6V0H5			
SPHWHTL3D303E6V0J4			
SPHWHTL3D303E6V0K3			
SPHWHTL3D305E6V0G4			
SPHWHTL3D305E6V0H3		VU (Half Bin)	V5,V6,V7,V8,V9,VA,VB,VC
SPHWHTL3D305E6VUG4			
SPHWHTL3D305E6VUH3		VP (Quater Bin)	V6,V7,VA,VB
SPHWHTL3D303E6VPH5			
SPHWHTL3D303E6VPJ4			
SPHWHTL3D303E6VPK3			
SPHWHTL3D305E6VPG4			
SPHWHTL3D305E6VPH3		VM (MacAdam 3-Step)	-
SPHWHTL3D305E6VMG4			
SPHWHTL3D305E6VMH3			



### 3-1) Color Binning (Continued)

Nominal CCT	Product Code	Color Rank	Chromaticity Bins
3500K	SPHWHTL3D305E6U0G4	U0 (Whole Bin)	U1,U2,U3,U4,U5,U6,U7,U8, U9,UA,UB,UC,UD,UE,UF,UG
	SPHWHTL3D305E6U0H3		
	SPHWHTL3D305E6UUG4	UU (Half Bin)	U5,U6,U7,U8,U9,UA,UB,UC
	SPHWHTL3D305E6UJH3		
	SPHWHTL3D305E6UPG4	UP (Quater Bin)	U6,U7,UA,UB
	SPHWHTL3D305E6UPH3		
	SPHWHTL3D305E6UMG4	UM (MacAdam 3-Step)	-
	SPHWHTL3D305E6UMH3		
4000K	SPHWHTL3D303E6T0K3	T0 (Whole Bin)	T1,T2,T3,T4,T5,T6,T7,T8, T9,TA,TB,TC,TD,TE,TF,TG
	SPHWHTL3D303E6T0M2		
	SPHWHTL3D305E6T0G4		
	SPHWHTL3D305E6T0H3		
	SPHWHTL3D305E6T0J2		
	SPHWHTL3D305E6TUG4	TU (Half Bin)	T5,T6,T7,T8,T9,TA,TB,TC
	SPHWHTL3D305E6TUH3		
	SPHWHTL3D305E6TUJ2		
	SPHWHTL3D305E6TPG4	TP (Quater Bin)	T6,T7,TA,TB
	SPHWHTL3D305E6TPH3		
	SPHWHTL3D305E6TPJ2		
	SPHWHTL3D305E6TMG4	TM (MacAdam 3-Step)	-
	SPHWHTL3D305E6TMH3		
	SPHWHTL3D305E6TMJ2		
5000K	SPHWHTL3D303E6RTJ4	RT (Half Bin)	R1,R2,R3,R4
	SPHWHTL3D303E6RTK3		
	SPHWHTL3D303E6RTM2		
	SPHWHTL3D304E6RTJ4		
	SPHWHTL3D304E6RTK3		
5700K	SPHWHTL3D303E6QTJ4	QT (Half Bin)	Q1,Q2,Q3,Q4
	SPHWHTL3D303E6QTK3		
	SPHWHTL3D303E6QTM2		
	SPHWHTL3D304E6QTJ4		
	SPHWHTL3D304E6QTK3		
6500K	SPHWHTL3D303E6PTJ4	PT (Half Bin)	P1,P2,P3,P4
	SPHWHTL3D303E6PTK3		
	SPHWHTL3D303E6PTM2		
7600K	SPHWHTL3D303E6N0J4	N0 (Whole Bin)	N1,N2,N3,N4,N5,N6,N7,N8
	SPHWHTL3D303E6N0K3		

### 3-2) Chromaticity Region & Coordinates



### 3-2) Chromaticity Region & Coordinates (Continued)

Region	CIE X	CIE Y	Region	CIE X	CIE Y	Region	CIE X	CIE Y	Region	CIE X	CIE Y
W rank (2700K)						V rank (3000K)					
W1	0.4373	0.3893	W9	0.4465	0.4071	V1	0.4147	0.3814	V9	0.4221	0.3984
	0.4418	0.3981		0.4513	0.4164		0.4183	0.3898		0.4259	0.4073
	0.4475	0.3994		0.4573	0.4178		0.4242	0.3919		0.4322	0.4096
	0.4428	0.3906		0.4523	0.4085		0.4203	0.3833		0.4281	0.4006
W2	0.4428	0.3906	WA	0.4523	0.4085	V2	0.4203	0.3833	VA	0.4281	0.4006
	0.4475	0.3994		0.4573	0.4178		0.4242	0.3919		0.4322	0.4096
	0.4532	0.4008		0.4634	0.4193		0.4300	0.3939		0.4385	0.4119
	0.4483	0.3919		0.4582	0.4099		0.4259	0.3853		0.4342	0.4028
W3	0.4483	0.3919	WB	0.4582	0.4099	V3	0.4259	0.3853	VB	0.4342	0.4028
	0.4532	0.4008		0.4634	0.4193		0.4300	0.3939		0.4385	0.4119
	0.4589	0.4021		0.4695	0.4207		0.4359	0.3960		0.4449	0.4141
	0.4538	0.3931		0.4641	0.4112		0.4316	0.3873		0.4403	0.4049
W4	0.4538	0.3931	WC	0.4641	0.4112	V4	0.4316	0.3873	VC	0.4403	0.4049
	0.4589	0.4021		0.4695	0.4207		0.4359	0.3960		0.4449	0.4141
	0.4646	0.4034		0.4756	0.4221		0.4418	0.3981		0.4513	0.4164
	0.4593	0.3944		0.4700	0.4126		0.4373	0.3893		0.4465	0.4071
W5	0.4418	0.3981	WD	0.4513	0.4164	V5	0.4183	0.3898	VD	0.4259	0.4073
	0.4465	0.4071		0.4562	0.4260		0.4221	0.3984		0.4299	0.4165
	0.4523	0.4085		0.4624	0.4274		0.4281	0.4006		0.4364	0.4188
	0.4475	0.3994		0.4573	0.4178		0.4242	0.3919		0.4322	0.4096
W6	0.4475	0.3994	WE	0.4573	0.4178	V6	0.4242	0.3919	VE	0.4322	0.4096
	0.4523	0.4085		0.4624	0.4274		0.4281	0.4006		0.4364	0.4188
	0.4582	0.4099		0.4687	0.4289		0.4342	0.4028		0.4430	0.4212
	0.4532	0.4008		0.4634	0.4193		0.4300	0.3939		0.4385	0.4119
W7	0.4532	0.4008	WF	0.4634	0.4193	V7	0.4300	0.3939	VF	0.4385	0.4119
	0.4582	0.4099		0.4687	0.4289		0.4342	0.4028		0.4430	0.4212
	0.4641	0.4112		0.4750	0.4304		0.4403	0.4049		0.4496	0.4236
	0.4589	0.4021		0.4695	0.4207		0.4359	0.3960		0.4449	0.4141
W8	0.4589	0.4021	WG	0.4695	0.4207	V8	0.4359	0.3960	VG	0.4449	0.4141
	0.4641	0.4112		0.4750	0.4304		0.4403	0.4049		0.4496	0.4236
	0.4700	0.4126		0.4813	0.4319		0.4465	0.4071		0.4562	0.4260
	0.4646	0.4034		0.4756	0.4221		0.4418	0.3981		0.4513	0.4164

### 3-2) Chromaticity Region & Coordinates (Continued)

Region	CIE X	CIE Y	Region	CIE X	CIE Y	Region	CIE X	CIE Y	Region	CIE X	CIE Y
U rank (3500K)						T rank (4000K)					
U1	0.3889	0.3690	U9	0.3941	0.3848	T1	0.367	0.3578	T9	0.3702	0.3722
	0.3915	0.3768		0.3968	0.3930		0.3726	0.3612		0.3763	0.376
	0.3981	0.3800		0.4040	0.3966		0.3744	0.3685		0.3782	0.3837
	0.3953	0.3720		0.4010	0.3882		0.3686	0.3649		0.3719	0.3797
U2	0.3953	0.3720	UA	0.4010	0.3882	T2	0.3726	0.3612	TA	0.3763	0.376
	0.3981	0.3800		0.4040	0.3966		0.3783	0.3646		0.3825	0.3798
	0.4048	0.3832		0.4113	0.4001		0.3804	0.3721		0.3847	0.3877
	0.4017	0.3751		0.4080	0.3916		0.3744	0.3685		0.3782	0.3837
U3	0.4017	0.3751	UB	0.4080	0.3916	T3	0.3783	0.3646	TB	0.3825	0.3798
	0.4048	0.3832		0.4113	0.4001		0.384	0.3681		0.3887	0.3836
	0.4116	0.3865		0.4186	0.4037		0.3863	0.3758		0.3912	0.3917
	0.4082	0.3782		0.4150	0.3950		0.3804	0.3721		0.3847	0.3877
U4	0.4082	0.3782	UC	0.4150	0.3950	T4	0.384	0.3681	TC	0.3887	0.3837
	0.4116	0.3865		0.4186	0.4037		0.3898	0.3716		0.395	0.3875
	0.4183	0.3898		0.4259	0.4073		0.3924	0.3794		0.3978	0.3958
	0.4147	0.3814		0.4221	0.3984		0.3863	0.3758		0.3912	0.3917
U5	0.3915	0.3768	UD	0.3968	0.3930	T5	0.3686	0.3649	TD	0.3719	0.3797
	0.3941	0.3848		0.3996	0.4015		0.3744	0.3685		0.3782	0.3837
	0.4010	0.3882		0.4071	0.4052		0.3763	0.376		0.3802	0.3916
	0.3981	0.3800		0.4040	0.3966		0.3702	0.3722		0.3736	0.3874
U6	0.3981	0.3800	UE	0.4040	0.3966	T6	0.3744	0.3685	TE	0.3782	0.3837
	0.4010	0.3882		0.4071	0.4052		0.3804	0.3721		0.3847	0.3877
	0.4080	0.3916		0.4146	0.4089		0.3825	0.3798		0.3869	0.3958
	0.4048	0.3832		0.4113	0.4001		0.3763	0.376		0.3802	0.3916
U7	0.4048	0.3832	UF	0.4113	0.4001	T7	0.3804	0.3721	TF	0.3847	0.3877
	0.4080	0.3916		0.4146	0.4089		0.3863	0.3758		0.3912	0.3917
	0.4150	0.3950		0.4222	0.4127		0.3887	0.3836		0.3937	0.4001
	0.4116	0.3865		0.4186	0.4037		0.3825	0.3798		0.3869	0.3958
U8	0.4116	0.3865	UG	0.4186	0.4037	T8	0.3863	0.3758	TG	0.3912	0.3917
	0.4150	0.3950		0.4222	0.4127		0.3924	0.3794		0.3978	0.3958
	0.4221	0.3984		0.4299	0.4165		0.395	0.3875		0.4006	0.4044
	0.4183	0.3898		0.4259	0.4073		0.3887	0.3836		0.3937	0.4001



### 3-2) Chromaticity Region & Coordinates (Continued)

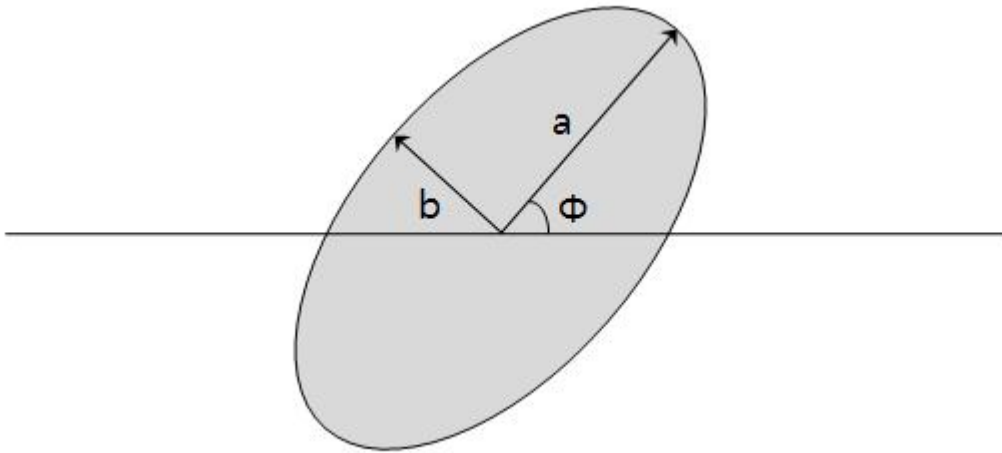
Region	CIE X	CIE Y	Region	CIE X	CIE Y	Region	CIE X	CIE Y
R rank (5000K)			Q rank (5700K)			P rank (6500K)		
R1	0.3371	0.3490	Q1	0.3215	0.3350	P1	0.3068	0.3113
	0.3451	0.3554		0.3290	0.3417		0.3144	0.3186
	0.3440	0.3427		0.3290	0.3300		0.3130	0.3290
	0.3366	0.3369		0.3222	0.3243		0.3048	0.3207
R2	0.3451	0.3554	Q2	0.3290	0.3417	P2	0.3144	0.3186
	0.3533	0.3620		0.3371	0.3490		0.3221	0.3261
	0.3515	0.3487		0.3366	0.3369		0.3213	0.3373
	0.3440	0.3427		0.3290	0.3300		0.3130	0.3290
R3	0.3376	0.3616	Q3	0.3207	0.3462	P3	0.3048	0.3207
	0.3463	0.3687		0.3290	0.3538		0.3130	0.3290
	0.3451	0.3554		0.3290	0.3417		0.3115	0.3391
	0.3371	0.3490		0.3215	0.3350		0.3028	0.3304
R4	0.3463	0.3687	Q4	0.3290	0.3538	P4	0.3130	0.3290
	0.3551	0.3760		0.3376	0.3616		0.3213	0.3373
	0.3533	0.3620		0.3371	0.3490		0.3205	0.3481
	0.3451	0.3554		0.3290	0.3417		0.3115	0.3391
N rank (7600K)								
N1	0.2933	0.2930	N5	0.2959	0.2860			
	0.3000	0.3021		0.3026	0.2927			
	0.2976	0.3106		0.3000	0.3021			
	0.2905	0.3005		0.2933	0.2930			
N2	0.3000	0.3021	N6	0.3026	0.2927			
	0.3068	0.3113		0.3093	0.2993			
	0.3048	0.3207		0.3068	0.3113			
	0.2976	0.3106		0.3000	0.3021			
N3	0.2905	0.3005	N7	0.2879	0.3072			
	0.2976	0.3106		0.2954	0.3188			
	0.2954	0.3188		0.2928	0.3283			
	0.2879	0.3072		0.2850	0.3150			
N4	0.2976	0.3106	N8	0.2954	0.3188			
	0.3048	0.3207		0.3028	0.3304			
	0.3028	0.3304		0.3005	0.3415			
	0.2954	0.3188		0.2928	0.3283			

Notes:

SAMSUNG ELECTRONICS maintains  $\pm 0.01$  tolerance of CCx, CCy



### 3-3) MacAdam 3-step Ellipse



Nominal CCT	Center		Rotation Angle	a	b
	CIE X	CIE Y			
2700K	0.4578	0.4101	53.70	0.0081	0.0042
3000K	0.4338	0.4030	53.22	0.0083	0.0041
3500K	0.4073	0.3917	54.00	0.0093	0.0041
4000K	0.3818	0.3797	53.72	0.0094	0.0040

Notes:

SAMSUNG ELECTRONICS maintains  $\pm 0.01$  tolerance of CCx, CCy

<h2>Revision History</h2>
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Date	Revision History	Writer	
		Drawn	Approved
2012.08.17	New version	G.E.CHO	Y.T.KIM
2012.09.24	2nd version	G.E.CHO	Y.T.KIM
2012.10.26	3rd version	I.J.PYEON	Y.T.KIM
2013.02.22	4th version	I.J.PYEON	Y.T.KIM
2013.04.19	5th version	I.J.PYEON	Y.T.KIM
2013.06.02	6th version	I.J.PYEON	Y.T.KIM
2013.07.31	7th version	I.J.PYEON	Y.T.KIM