

EMC 5050 Ra70 Square Series

EMC 5050 is a surface-mount LED which uses standard package dimension of 5.0x 5.0 x 0.70mm, enabling drop-in replacement for existing 5050 packages. Besides, EMC package is heat-resistant and especially suitable for high power applications. 5050 Series comes in all ANSI CCTs and delivers the efficacy and reliability required for outdoor street light applications.



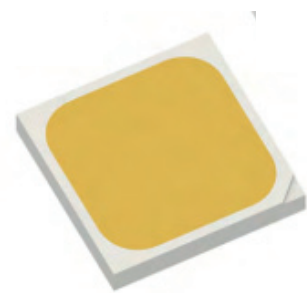
Street Light



Flood Light



High Bay



Applications :

- Street light
- Flood Light
- High Bay

Features :

- Package: white SMT package, colored diffused silicone resin
- Dimension: 5.0 mmx5.0 mmx0.7mm
- Chip technology: GaN
- View Angle: 120°
- Color temperature: 2700K~6500K
- Voltage: 6V/24V/30V
- MSL: Level 3

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General Information

Ordering Code Format

<u>2</u>	<u>T</u>	<u>04</u>	<u>05</u>	<u>xx</u>	<u>A</u>	<u>70</u>	<u>xx</u>	<u>xxx</u>
X1	X2	X3-X4	X5-X6	X7-X8	X9	X10-X11	X12-X13	X14-X16

X1		X2		X3-X4		X5-X6		X7-X8	
Type		Component		Series		Wattage		Color/CCT	
2	Emitter	T	PLCC	04	5050	05	5W	65	6500K
								57	5700K
								50	5000K
								40	4000K
								35	3500K
								30	3000K
								27	2700K

X9		X10-X11		X12-X13		X14-X16	
BIN		CRI		Voltage		Serial Number	
A	ANSI	70	CRI (Ra) 70	06	6V	-	-
				24	24V		
				30	30V		

Absolute Maximum Ratings

Absolute maximum ratings

Parameter		Symbol	Values		
			6V	24V	30V
Forward current $T_j = 25\text{ °C}$	max.	I_F	1000mA	240mA	240mA
Surge Current $t \leq 10\text{ }\mu\text{s}; D = 0.005; T_j = 25\text{ °C}$	max.	I_{FS}	1250mA	300mA	300mA
Operating Temperature	min.	T_{op}	-40 °C		
	max.				
Storage Temperature	min.	T_{stg}	-40 °C		
	max.				
Junction Temperature	max.	T_j	125 °C		
Reverse voltage $T_j = 25\text{ °C}$	max.	V_R	-		
ESD withstand voltage acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)		V_{ESD}	Up to 2 kV		
Real thermal resistance junction/solder point	typ.	$R_{thJS\text{ real}}$	2		

Notes:

1. Proper current derating must be observed to maintain junction temperature below the maximum at all time.
2. LEDs are not designed to be driven in reverse bias.

Luminous Flux Characteristic-6V

Luminous Flux Characteristics, $I_f=640\text{mA}$ and $T_j=25^\circ\text{C}$

Color	CRI (Ra)	Group	Min. Luminous flux (lm)	Max. Luminous flux (lm)	Order Code
6500K	70	H65	650	700	2T040565A7006004
		H70	700	750	
		H75	750	800	
5700K		H70	700	750	2T040557A7006004
		H75	750	800	
5000K		H70	700	750	2T040550A7006004
		H75	750	800	
4000K		H70	700	750	2T040540A7006004
		H75	750	800	
3500K		H65	650	700	2T040535A7006004
		H70	700	750	
3000K		H65	650	700	2T040530A7006004
	H70	700	750		
2700K	H60	600	650	2T040527A7006004	
	H65	650	700		
	H70	700	750		

Note:

The luminous flux performance is guaranteed within published operating conditions. Edison Opto maintains a tolerance of $\pm 10\%$ on flux measurements.

Voltage Bin Structure-6V

Voltage Bin Structure, $I_f=640\text{mA}$ and $T_j=25^\circ\text{C}$

Group	Min. Voltage (V)	Max. Voltage (V)
U58	5.8	6.0
U60	6.0	6.2
U62	6.2	6.4

Note:

Forward voltage measurement allowance is $\pm 0.1\text{V}$.

Electro - Optical Characteristics (6V -4000K)

IF(mA)	VF(V)	Power(W)	Im	Im/W
100	5.38	0.538	128.8	239.2
150	5.47	0.821	193.0	235.1
200	5.55	1.110	254.8	229.6
250	5.62	1.405	317.6	226.0
300	5.68	1.703	377.2	221.4
350	5.73	2.005	434.5	216.7
400	5.82	2.329	492.6	211.6
450	5.88	2.645	548.5	207.4
500	5.94	2.970	605.6	203.9
640	6.12	3.917	750.5	191.6
750	6.26	4.695	863.0	183.8
800	6.3	5.040	904.8	179.5
900	6.42	5.779	996.6	172.5
1000	6.49	6.490	1087.4	167.6

Note:
LM Valus are for representatiave reference only

Luminous Flux Characteristic-6V HE

Luminous Flux Characteristics, $I_f=640\text{mA}$ and $T_j=25^\circ\text{C}$

Color	CRI (Ra)	Group	Min. Luminous flux (lm)	Max. Luminous flux (lm)	Order Code
6500K	70	H65	650	700	2T040565A7006005
		H70	700	750	
5700K		H70	700	750	2T040557A7006005
		H75	750	800	
5000K		H70	700	750	2T040550A7006005
		H75	750	800	
4000K		H70	700	750	2T040540A7006005
		H75	750	800	
3500K		H65	650	700	2T040535A7006005
		H70	700	750	
3000K		H65	650	700	2T040530A7006005
		H70	700	750	
2700K		H65	650	700	2T040527A7006005
		H70	700	750	

Note:

The luminous flux performance is guaranteed within published operating conditions. Edison Opto maintains a tolerance of $\pm 10\%$ on flux measurements.

Voltage Bin Structure-6V HE

Voltage Bin Structure, $I_f=640\text{mA}$ and $T_j=25^\circ\text{C}$

Group	Min. Voltage (V)	Max. Voltage (V)
U56	5.6	5.8
U58	5.8	6.0
U60	6.0	6.2

Note:

Forward voltage measurement allowance is $\pm 0.1\text{V}$.

Electro - Optical Characteristics (6V HE-4000K)

IF(mA)	VF(V)	Power(W)	Im	Im/W
100	5.34	0.534	129.1	241.5
150	5.42	0.813	193.4	237.8
200	5.49	1.098	255.8	233.0
250	5.56	1.390	317.5	228.4
300	5.64	1.691	377.9	223.4
350	5.69	1.991	437.3	219.7
400	5.76	2.305	496.4	215.4
450	5.83	2.623	554.2	211.3
500	5.86	2.930	609.5	208.0
640	6.07	3.885	761.1	195.9
750	6.2	4.650	880.7	189.4
800	6.25	5.000	928.1	185.6
900	6.36	5.725	1029.6	179.8
1000	6.43	6.430	1116.8	173.7

Note:
LM Valus are for representatiave reference only

Luminous Flux Characteristic-6V UE

Luminous Flux Characteristics, $I_f=640\text{mA}$ and $T_j=25^\circ\text{C}$

Color	CRI (Ra)	Group	Min. Luminous flux (lm)	Max. Luminous flux (lm)	Order Code
6500K	70	H70	700	750	2T040565A7006006
		H75	750	800	
5700K		H70	700	750	2T040557A7006006
		H75	750	800	
5000K		H70	700	750	2T040550A7006006
		H75	750	800	
4000K		H70	700	750	2T040540A7006006
		H75	750	800	
3500K		H70	700	750	2T040535A7006006
		H75	750	800	
3000K		H70	700	750	2T040530A7006006
		H75	750	800	
2700K		H65	650	700	2T040527A7006006
		H70	700	750	

Note:

The luminous flux performance is guaranteed within published operating conditions. Edison Opto maintains a tolerance of $\pm 10\%$ on flux measurements.

Voltage Bin Structure-6V UE

Voltage Bin Structure, $I_f=640\text{mA}$ and $T_j=25^\circ\text{C}$

Group	Min. Voltage (V)	Max. Voltage (V)
U56	5.6	5.8
U58	5.8	6.0
U60	6.0	6.2

Note:

Forward voltage measurement allowance is $\pm 0.1\text{V}$.

Electro - Optical Characteristics (6V UE)

IF(mA)	VF(V)	Power(W)	Im	Im/W
100	5.28	0.528	129.6	245.5
150	5.36	0.804	193.7	240.8
200	5.42	1.084	256.5	236.6
250	5.48	1.370	318.0	232.1
300	5.54	1.661	378.0	227.5
350	5.59	1.956	437.8	223.9
400	5.64	2.257	498.0	220.7
450	5.67	2.551	555.2	217.7
500	5.74	2.870	611.7	213.1
640	5.89	3.769	768.4	203.8
750	5.99	4.492	890.3	198.2
800	6.07	4.856	947.4	195.1
900	6.14	5.527	1052.9	190.5
1000	6.19	6.190	1149.2	185.7

Note:
LM Valus are for representatiave reference only

Luminous Flux Characteristic-24V HE

Luminous Flux Characteristics, $I_f=160\text{mA}$ and $T_j=25^\circ\text{C}$

Color	CRI (Ra)	Group	Min. Luminous flux (lm)	Max. Luminous flux (lm)	Order Code
6500K	70	H65	650	690	2T040565A7024005
		H70	700	750	
5700K		H70	700	750	2T040557A7024005
		H75	750	800	
5000K		H70	700	750	2T040550A7024005
		H75	750	800	
4000K		H70	700	750	2T040540A7024005
		H75	750	800	
3500K		H70	700	700	2T040535A7024005
		H75	750	800	
3000K		H65	650	700	2T040530A7024005
		H70	700	750	
2700K		H65	650	700	2T040527A7024005
		H70	700	750	

Note:

The luminous flux performance is guaranteed within published operating conditions. Edison Opto maintains a tolerance of $\pm 10\%$ on flux measurements.

Voltage Bin Structure-24V HE

Voltage Bin Structure, $I_f=160\text{mA}$ and $T_j=25^\circ\text{C}$

Group	Min. Voltage (V)	Max. Voltage (V)
V23	23	24
V24	24	25
V25	25	26

Note:

Forward voltage measurement allowance is $\pm 0.1\text{V}$.

Electro - Optical Characteristics (24V HE-4000K)

IF(mA)	VF(V)	Power(W)	Im	Im/W
20	21.38	0.428	104.0	243.3
40	21.94	0.878	205.6	234.2
60	22.41	1.345	306.0	227.6
80	22.84	1.827	404.3	221.3
100	23.27	2.327	497.4	213.8
120	23.68	2.842	590.9	207.9
140	24.07	3.370	678.7	201.4
160	24.46	3.914	764.0	195.2
180	24.85	4.473	847.6	189.5
200	25.22	5.044	927.6	183.9
220	25.57	5.625	1000.6	177.9
240	25.94	6.226	1072.2	172.2

Note:
LM Valus are for representatiave reference only

Luminous Flux Characteristic-24V UE

Luminous Flux Characteristics, $I_f=160\text{mA}$ and $T_j=25^\circ\text{C}$

Color	CRI (Ra)	Group	Min. Luminous flux (lm)	Max. Luminous flux (lm)	Order Code
6500K	70	H70	700	750	2T040565A7024006
		H75	750	800	
5700K		H70	700	750	2T040557A7024006
		H75	750	800	
5000K		H70	700	750	2T040550A7024006
		H75	750	800	
4000K		H70	700	750	2T040540A7024006
		H75	750	800	
3500K		H70	700	750	2T040535A7024006
		H75	750	800	
3000K	H70	700	750	2T040530A7024006	
	H75	750	800		
2700K	H65	650	700	2T040527A7024006	
	H70	700	750		

Note:

The luminous flux performance is guaranteed within published operating conditions. Edison Opto maintains a tolerance of $\pm 10\%$ on flux measurements.

Voltage Bin Structure-24V UE

Voltage Bin Structure, $I_f=160\text{mA}$ and $T_j=25^\circ\text{C}$

Group	Min. Voltage (V)	Max. Voltage (V)
V23	23	24
V24	24	25

Note:

Forward voltage measurement allowance is $\pm 0.1\text{V}$.

Electro - Optical Characteristics (24V UE-4000K)

IF(mA)	VF(V)	Power(W)	Im	Im/W
20	21.23	0.425	104.4	245.8
40	21.75	0.870	206.8	237.7
60	22.25	1.335	306.5	229.6
80	22.66	1.813	405.1	223.5
100	23.04	2.304	497.8	216.1
120	23.42	2.810	591.3	210.4
140	23.8	3.332	679.9	204.1
160	24.14	3.862	767.6	198.7
180	24.55	4.419	852.1	192.8
200	24.95	4.990	930.6	186.5
220	25.2	5.544	1014.4	183.0
240	25.62	6.149	1091.1	177.4

Note:
LM Valus are for representatiave reference only

Luminous Flux Characteristic-30V HE

Luminous Flux Characteristics, $I_f=160\text{mA}$ and $T_j=25^\circ\text{C}$

Color	CRI (Ra)	Group	Min. Luminous flux (lm)	Max. Luminous flux (lm)	Order Code
6500K	70	H85	850	900	2T040565A7030005
		H90	900	950	
5700K		H85	850	900	2T040557A7030005
		H90	900	950	
5000K		H85	850	900	2T040550A7030005
		H90	900	950	
4000K		H85	850	900	2T040540A7030005
		H90	900	950	
3500K		H85	850	900	2T040535A7030005
		H90	900	950	
3000K	H85	850	900	2T040530A7030005	
	H90	900	950		
2700K	H80	800	850	2T040527A7030005	
	H85	850	900		

Note:

The luminous flux performance is guaranteed within published operating conditions. Edison Opto maintains a tolerance of $\pm 10\%$ on flux measurements.

Voltage Bin Structure-30V HE

Voltage Bin Structure, $I_f=160\text{mA}$ and $T_j=25^\circ\text{C}$

Group	Min. Voltage (V)	Max. Voltage (V)
V30	30	31
V31	31	32

Note:

Forward voltage measurement allowance is $\pm 0.1\text{V}$.

Electro - Optical Characteristics (30V HE-4000K)

IF(mA)	VF(V)	Power(W)	Im	Im/W
20	26.7	0.535	128.8	240.8
40	27.4	1.097	254.8	232.3
60	28.0	1.683	376.8	224.0
80	28.6	2.291	493.0	215.2
100	29.2	2.917	605.3	207.5
120	29.7	3.566	717.5	201.2
140	30.2	4.233	821.5	194.1
160	30.7	4.919	924.9	188.0
180	31.3	5.625	1022.2	181.7
200	31.7	6.348	1120.8	176.6
220	32.2	7.088	1210.0	170.7
240	32.7	7.853	1290.9	164.4

Note:
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Luminous Flux Characteristic-30V UE

Luminous Flux Characteristics, $I_f=160\text{mA}$ and $T_j=25^\circ\text{C}$

Color	CRI (Ra)	Group	Min. Luminous flux (lm)	Max. Luminous flux (lm)	Order Code
6500K	70	H85	850	900	2T040565A7030006
		H90	900	950	
5700K		H85	850	900	2T040557A7030006
		H90	900	950	
5000K		H90	900	950	2T040550A7030006
		H95	950	1000	
4000K		H90	900	950	2T040540A7030006
		H95	950	1000	
3500K		H90	900	950	2T040535A7030006
		H95	950	1000	
3000K		H85	850	900	2T040530A7030006
		H90	900	950	
2700K		H85	850	900	2T040527A7030006
		H90	900	950	

Note:

The luminous flux performance is guaranteed within published operating conditions. Edison Opto maintains a tolerance of $\pm 10\%$ on flux measurements.

Voltage Bin Structure-30V UE

Voltage Bin Structure, $I_f=160\text{mA}$ and $T_j=25^\circ\text{C}$

Group	Min. Voltage (V)	Max. Voltage (V)
V30	30	31
V31	31	32

Note:

Forward voltage measurement allowance is $\pm 0.1\text{V}$.

Electro - Optical Characteristics (30V UE-4000K)

IF(mA)	VF(V)	Power(W)	Im	Im/W
20	26.5	0.531	130.4	245.86
40	27.2	1.086	258.7	238.21
60	27.7	1.662	383.6	230.84
80	28.6	2.291	503.8	219.85
100	28.8	2.875	619.3	215.38
120	29.2	3.505	733.8	209.35
140	29.7	4.156	844.1	203.12
160	30.2	4.836	951.4	196.74
180	30.6	5.504	1052.3	191.17
200	31.0	6.206	1161.0	187.08
220	31.5	6.921	1250.8	180.71
240	31.9	7.658	1361.3	177.75

Note:
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Color BIN code

Color region stay within Macadam "3-Step/5-step" ellipse from the chromaticity center.

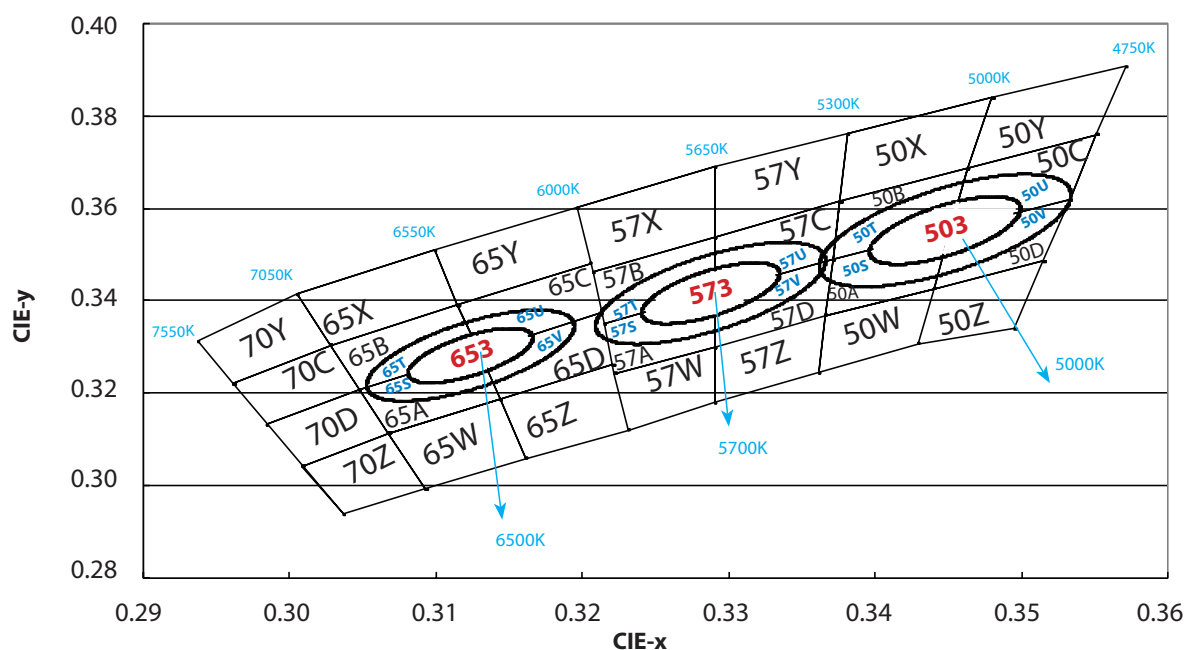
The chromaticity center refers to ANSI C78.377:2008.

Please refer to ANSI C78.377 for the chromaticity center.

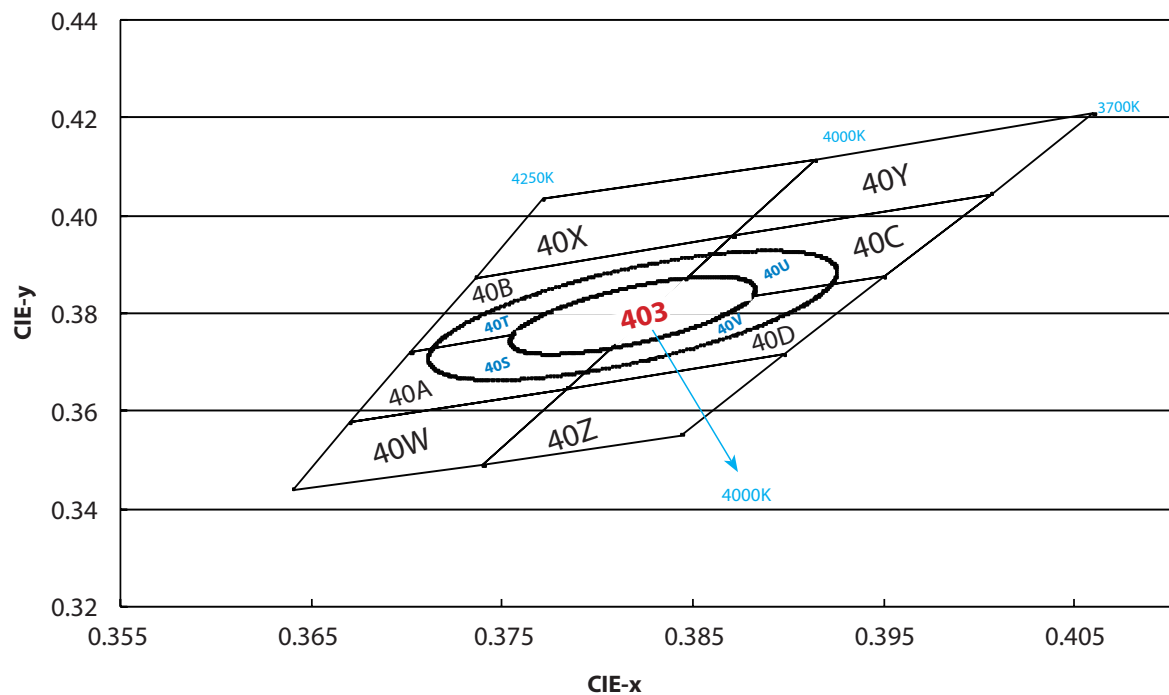
CCT	Steps	Cx	Cy	a	b	theta
2700K	5	0.4578	0.4101	0.01350	0.00700	53.70
3000K	5	0.4338	0.4030	0.01390	0.00680	53.22
3500K	5	0.4073	0.3917	0.01545	0.00690	54.00
4000K	5	0.3818	0.3797	0.01565	0.00670	53.72
5000K	5	0.3447	0.3553	0.01370	0.00590	59.62
5700K	5	0.3287	0.3417	0.01243	0.00533	59.09
6500K	5	0.3123	0.3282	0.01115	0.00475	58.57

CCT	Steps	Cx	Cy	a	b	theta
2700K	3	0.4578	0.4101	0.00810	0.00420	53.70
3000K	3	0.4338	0.4030	0.00834	0.00408	53.22
3500K	3	0.4073	0.3917	0.00927	0.00414	54.00
4000K	3	0.3818	0.3797	0.00939	0.00402	53.72
5000K	3	0.3447	0.3553	0.00822	0.00354	59.62
5700K	3	0.3287	0.3417	0.00746	0.00320	59.09
6500K	3	0.3123	0.3282	0.00669	0.00285	58.57

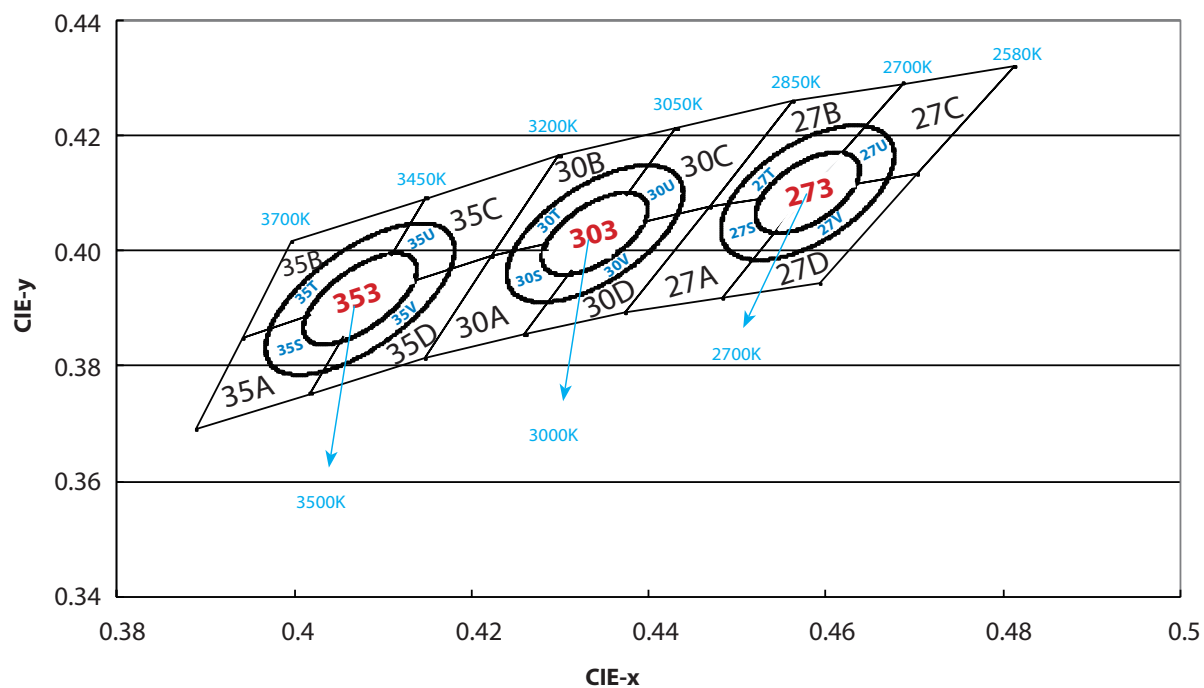
Cool White



Neutral White



Warm White



6500K

65X		65B		65A		65W	
X	Y	X	Y	X	Y	X	Y
0.3005	0.3415	0.3115	0.3391	0.3130	0.3290	0.3068	0.3113
0.3099	0.3509	0.3028	0.3304	0.3048	0.3207	0.3144	0.3186
0.3115	0.3391	0.3048	0.3207	0.3068	0.3113	0.3161	0.3059
0.3028	0.3304	0.3130	0.3290	0.3144	0.3186	0.3093	0.2993

65Y		65C		65D		65Z	
X	Y	X	Y	X	Y	X	Y
0.3099	0.3509	0.3205	0.3481	0.3213	0.3373	0.3144	0.3186
0.3196	0.3602	0.3115	0.3391	0.3130	0.3290	0.3221	0.3261
0.3205	0.3481	0.3130	0.3290	0.3144	0.3186	0.3231	0.3120
0.3115	0.3391	0.3213	0.3373	0.3221	0.3261	0.3161	0.3059

5700K

57X		57B		57A		57W	
X	Y	X	Y	X	Y	X	Y
0.3196	0.3602	0.3290	0.3538	0.3290	0.3417	0.3222	0.3243
0.3290	0.3690	0.3207	0.3462	0.3215	0.3350	0.3290	0.3300
0.3290	0.3538	0.3215	0.3350	0.3222	0.3243	0.3290	0.3180
0.3207	0.3462	0.3290	0.3417	0.3290	0.3300	0.3231	0.3120

57Y		57C		57D		57Z	
X	Y	X	Y	X	Y	X	Y
0.3290	0.3690	0.3376	0.3616	0.3371	0.3490	0.3290	0.3300
0.3381	0.3762	0.3290	0.3538	0.3290	0.3417	0.3366	0.3369
0.3376	0.3616	0.3290	0.3417	0.3290	0.3300	0.3361	0.3245
0.3290	0.3538	0.3371	0.3490	0.3366	0.3369	0.3290	0.3180

5000K

50X		50B		50A		50W	
X	Y	X	Y	X	Y	X	Y
0.3381	0.3762	0.3463	0.3687	0.3451	0.3554	0.3366	0.3369
0.3480	0.3840	0.3376	0.3616	0.3371	0.3490	0.3440	0.3427
0.3463	0.3687	0.3371	0.3490	0.3366	0.3369	0.3429	0.3307
0.3376	0.3616	0.3451	0.3554	0.3440	0.3427	0.3361	0.3245

50Y		50C		50D		50Z	
X	Y	X	Y	X	Y	X	Y
0.3480	0.3840	0.3551	0.3760	0.3533	0.3620	0.3440	0.3427
0.3571	0.3907	0.3463	0.3687	0.3451	0.3554	0.3515	0.3487
0.3551	0.3760	0.3451	0.3554	0.3440	0.3427	0.3495	0.3339
0.3463	0.3687	0.3533	0.3620	0.3515	0.3487	0.3429	0.3307

4000K

40X		40B		40A		40W	
X	Y	X	Y	X	Y	X	Y
0.3771	0.4034	0.3871	0.3959	0.3828	0.3803	0.3670	0.3578
0.3736	0.3874	0.3736	0.3874	0.3702	0.3722	0.3640	0.3440
0.3871	0.3959	0.3702	0.3722	0.3670	0.3578	0.3740	0.3491
0.3914	0.4115	0.3828	0.3803	0.3784	0.3647	0.3784	0.3647

40Y		40C		40D		40Z	
X	Y	X	Y	X	Y	X	Y
0.3914	0.4115	0.4006	0.4044	0.3950	0.3875	0.3784	0.3647
0.3871	0.3959	0.3871	0.3959	0.3828	0.3803	0.3740	0.3491
0.4006	0.4044	0.3828	0.3803	0.3784	0.3647	0.3844	0.3552
0.4060	0.4208	0.3950	0.3875	0.3898	0.3716	0.3898	0.3716

3500K

35A		35B		35C		35D	
X	Y	X	Y	X	Y	X	Y
0.4083	0.3921	0.4148	0.4090	0.4299	0.4165	0.4223	0.399
0.3941	0.3848	0.3996	0.4015	0.4148	0.4090	0.4083	0.3921
0.3889	0.3690	0.3941	0.3848	0.4083	0.3921	0.4018	0.3752
0.4018	0.3752	0.4083	0.3921	0.4223	0.399	0.4147	0.3814

3000K

30A		30B		30C		30D	
X	Y	X	Y	X	Y	X	Y
0.4345	0.4033	0.4431	0.4213	0.4562	0.4260	0.4468	0.4077
0.4223	0.3990	0.4299	0.4165	0.4431	0.4213	0.4345	0.4033
0.4147	0.3814	0.4223	0.3990	0.4345	0.4033	0.4260	0.3854
0.4260	0.3854	0.4345	0.4033	0.4468	0.4077	0.4373	0.3893

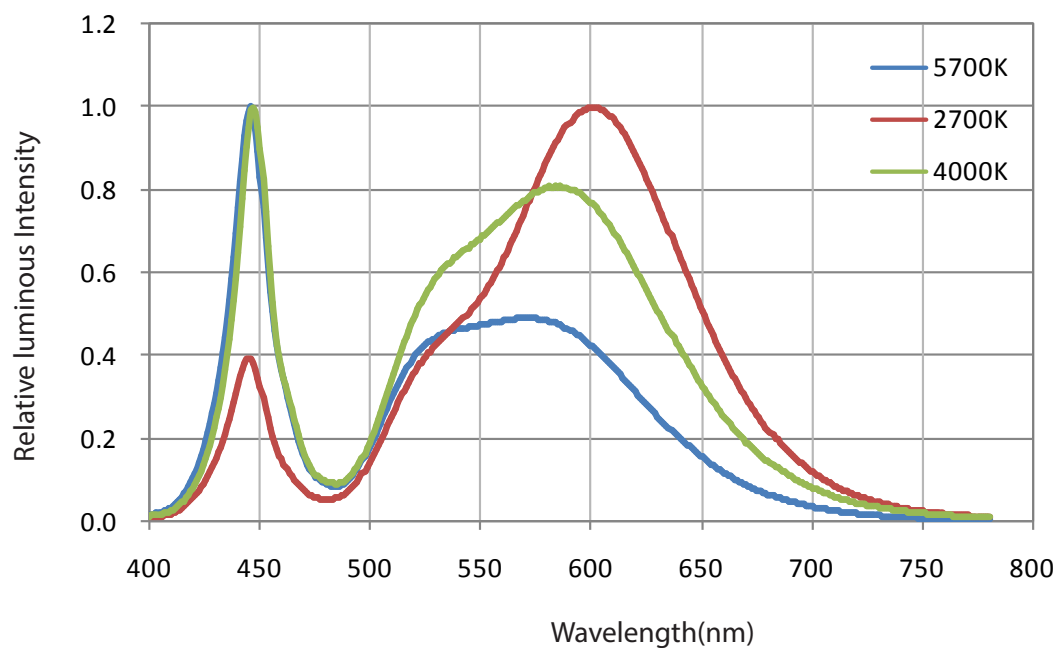
2700K

27A		27B		27C		27D	
X	Y	X	Y	X	Y	X	Y
0.4578	0.4101	0.4687	0.4289	0.4813	0.4319	0.4703	0.4132
0.4468	0.4077	0.4562	0.4260	0.4687	0.4289	0.4578	0.4101
0.4373	0.3893	0.4468	0.4077	0.4578	0.4101	0.4483	0.3919
0.4483	0.3919	0.4578	0.4101	0.4703	0.4132	0.4593	0.3944

Characteristic Curves

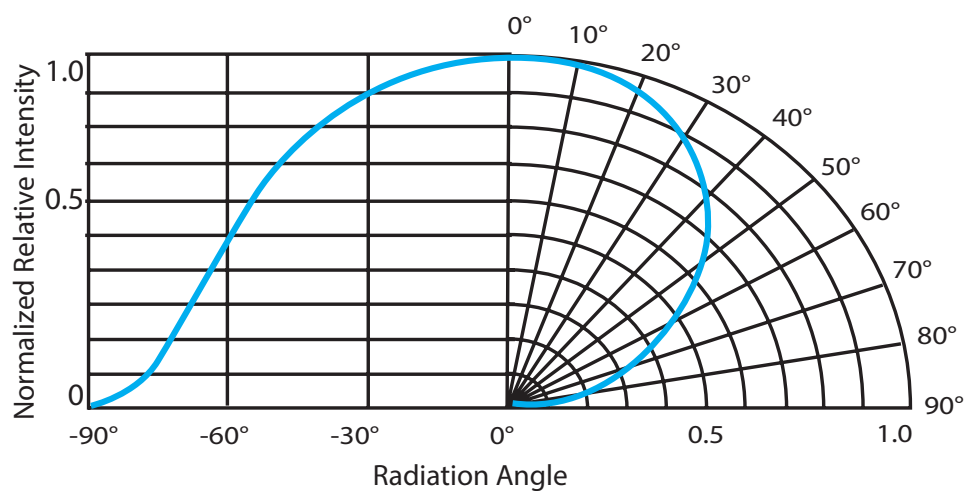
Color Spectrum(Ra70)

$T_j = 25^\circ\text{C}$



Beam Pattern

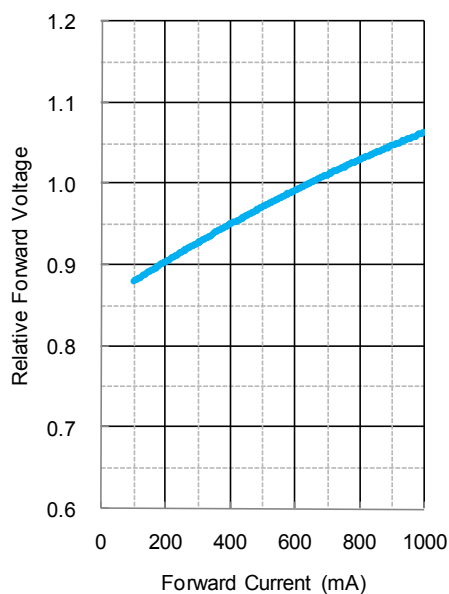
$T_j = 25^\circ\text{C}$



Characteristic Curves-6V

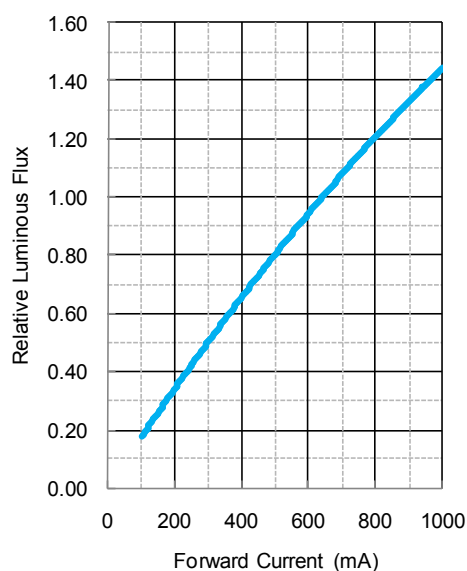
Relative Forward Voltage

$$V_F/V_F(640\text{mA}) = f(I_F); T_J = 25^\circ\text{C}$$



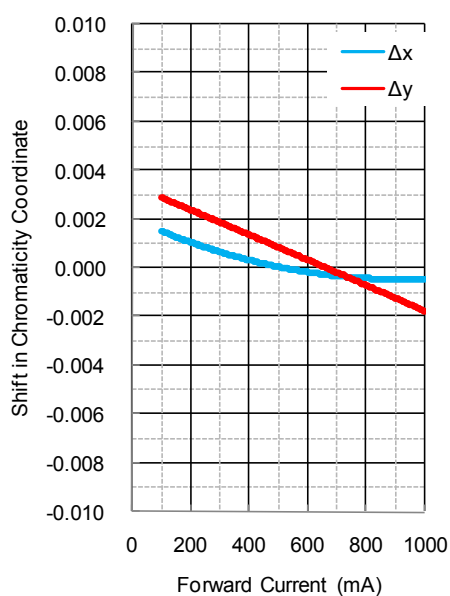
Relative Luminous Flux

$$\Phi_v/\Phi_v(640\text{mA}) = f(I_F); T_J = 25^\circ\text{C}$$



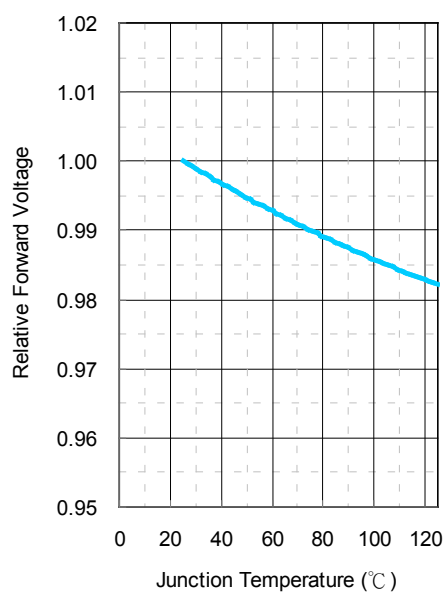
Chromaticity Coordinate Shift

$$\Delta C_x, \Delta C_y = f(I_F); T_J = 25^\circ\text{C}$$



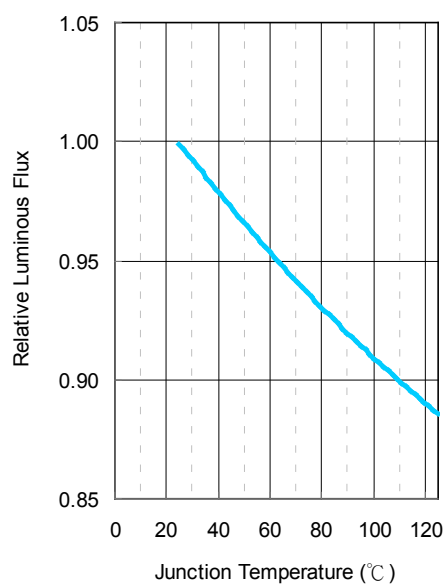
Relative Forward Voltage

$$V_f/V_f(25^\circ\text{C}) = f(T_j); I_f = 640 \text{ mA}$$



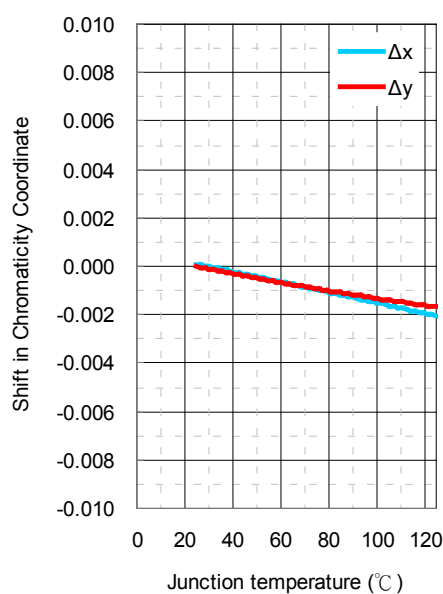
Relative Luminous Flux

$$\Phi_v/\Phi_v(25^\circ\text{C}) = f(T_j); I_f = 640 \text{ mA}$$



Chromaticity Coordinate Shift

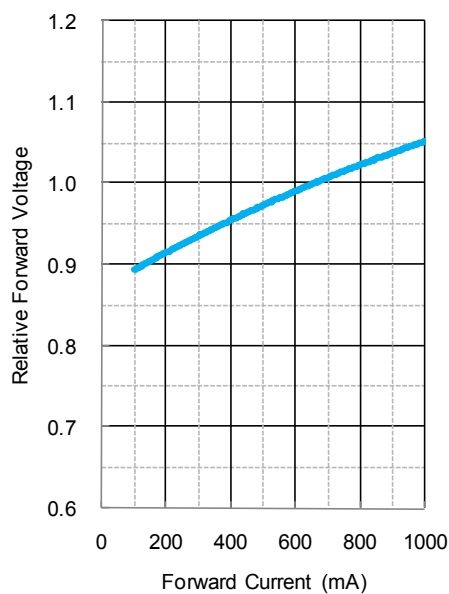
$$\Delta C_x, \Delta C_y = f(T_j); I_f = 640 \text{ mA}$$



Characteristic Curves-6V HE

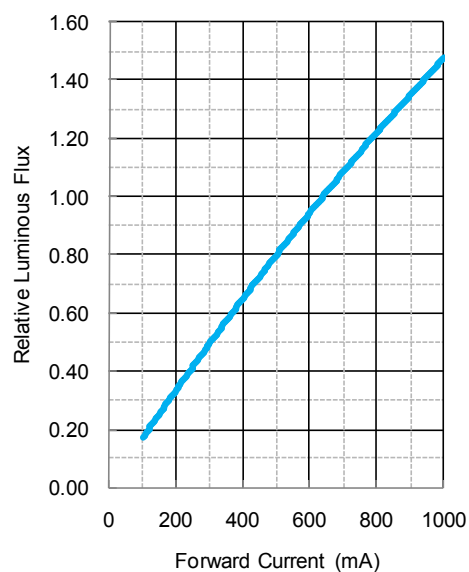
Relative Forward Voltage

$$V_F/V_F(640\text{mA}) = f(V_F); T_J = 25^\circ\text{C}$$



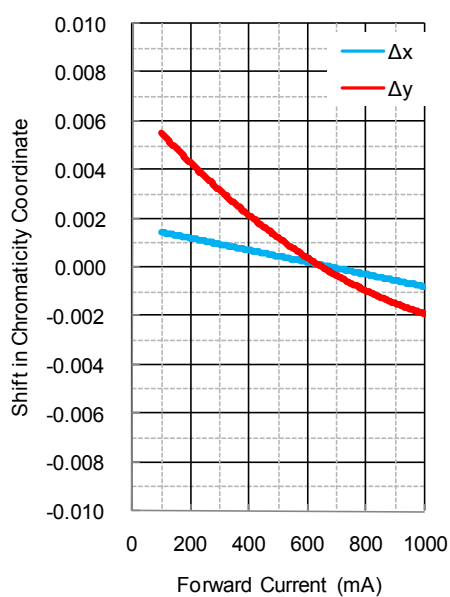
Relative Luminous Flux

$$\Phi_v/\Phi_v(640\text{mA}) = f(I_F); T_J = 25^\circ\text{C}$$



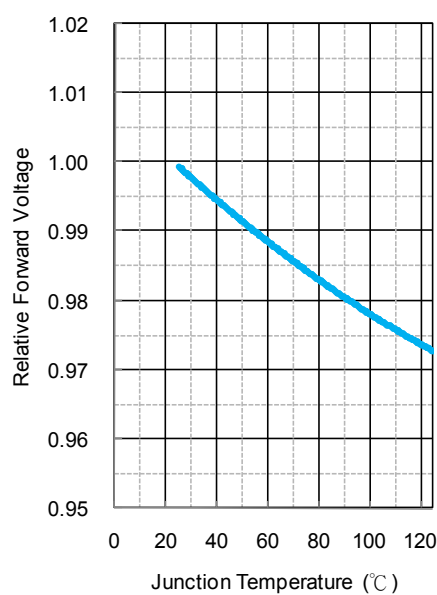
Chromaticity Coordinate Shift

$$\Delta C_x, \Delta C_y = f(I_F); T_J = 25^\circ\text{C}$$



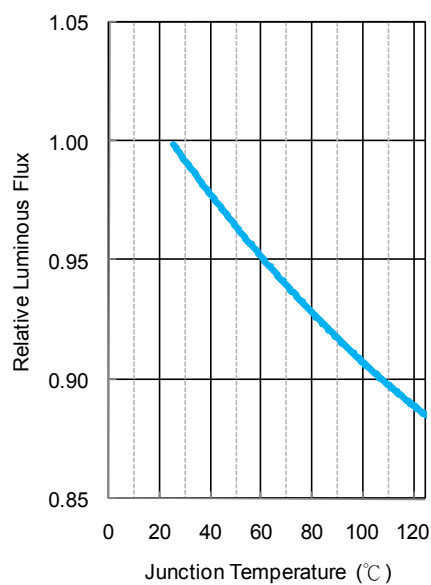
Relative Forward Voltage

$$V_f/V_f(25\text{ }^{\circ}\text{C}) = f(V_f); I_f = 640\text{ mA}$$



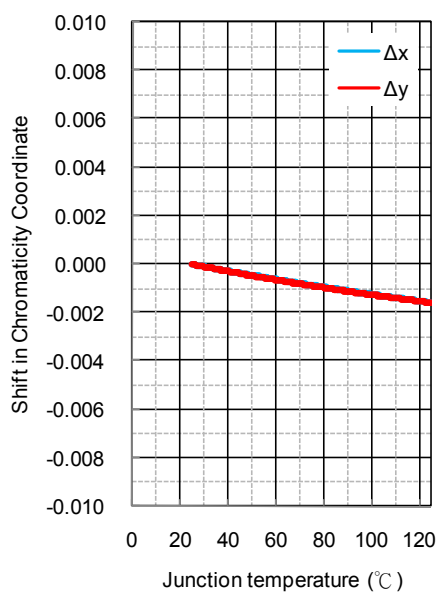
Relative Luminous Flux

$$\Phi_v/\Phi_v(25\text{ }^{\circ}\text{C}) = f(T_j); I_f = 640\text{ mA}$$



Chromaticity Coordinate Shift

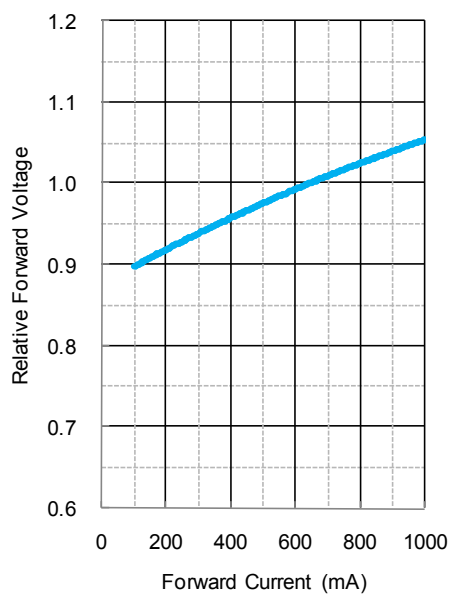
$$\Delta C_x, \Delta C_y = f(T_j); I_f = 640\text{ mA}$$



Characteristic Curves-6V UE

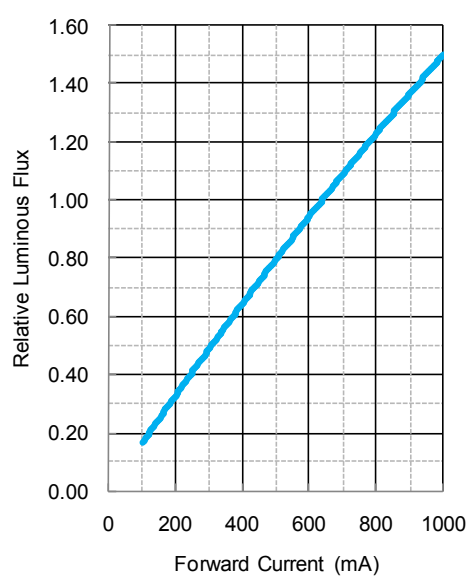
Relative Forward Voltage

$$V_F/V_F(640\text{mA}) = f(V_F); T_J = 25^\circ\text{C}$$



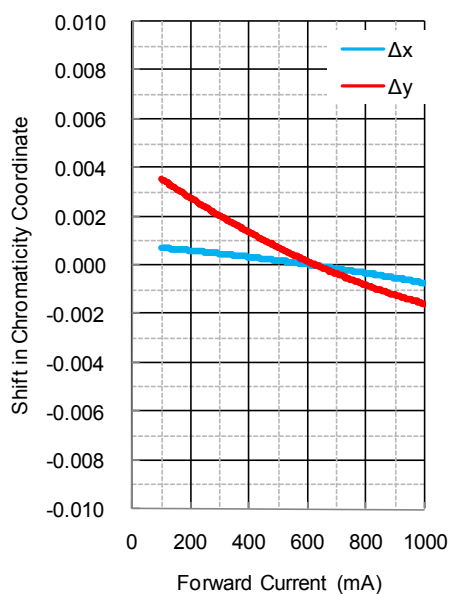
Relative Luminous Flux

$$\Phi_v/\Phi_v(640\text{mA}) = f(I_F); T_J = 25^\circ\text{C}$$



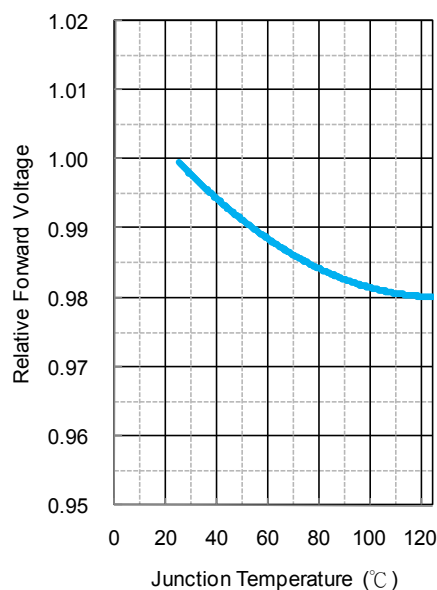
Chromaticity Coordinate Shift

$$\Delta C_x, \Delta C_y = f(I_F); T_J = 25^\circ\text{C}$$



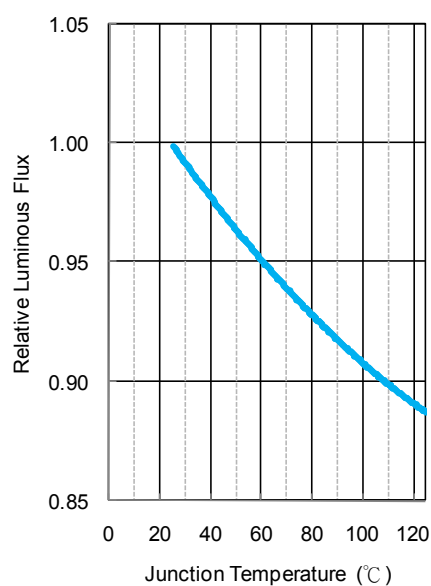
Relative Forward Voltage

$$V_F/V_F(25^\circ\text{C}) = f(T_J); I_F = 640 \text{ mA}$$



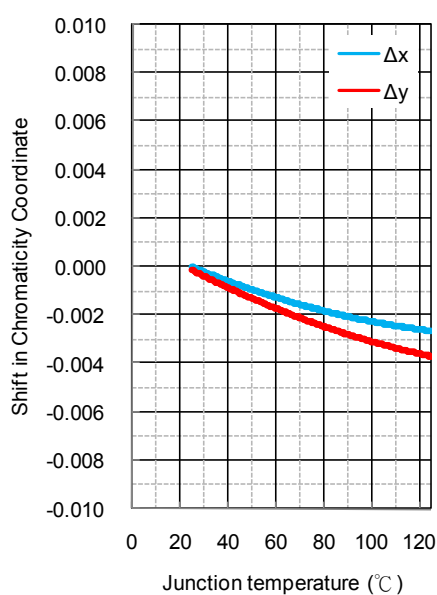
Relative Luminous Flux

$$\Phi_v/\Phi_v(25^\circ\text{C}) = f(T_J); I_F = 640 \text{ mA}$$



Chromaticity Coordinate Shift

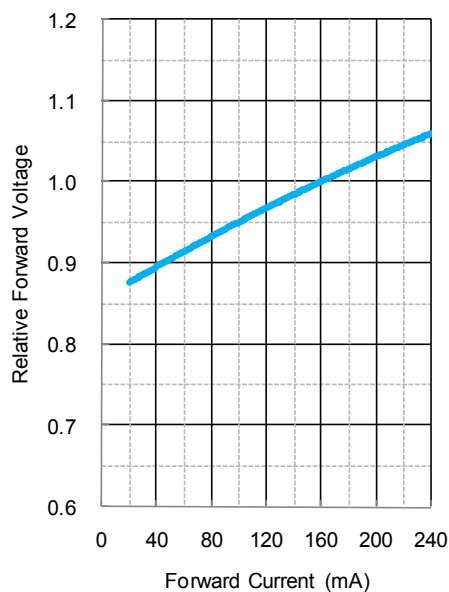
$$\Delta C_x, \Delta C_y = f(T_J); I_F = 640 \text{ mA}$$



Characteristic Curves-24V HE

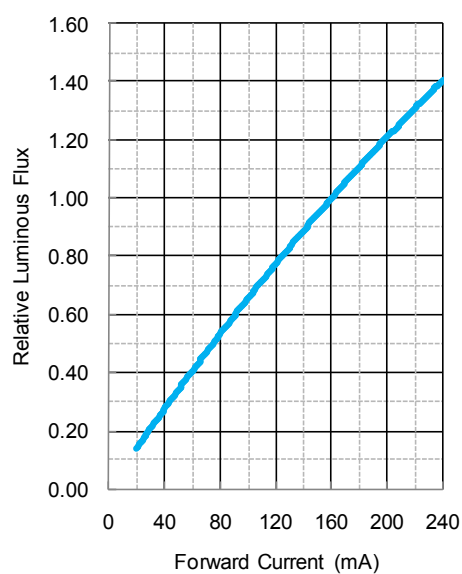
Relative Forward Voltage

$$V_F/V_F(160\text{mA}) = f(I_F); T_J = 25^\circ\text{C}$$



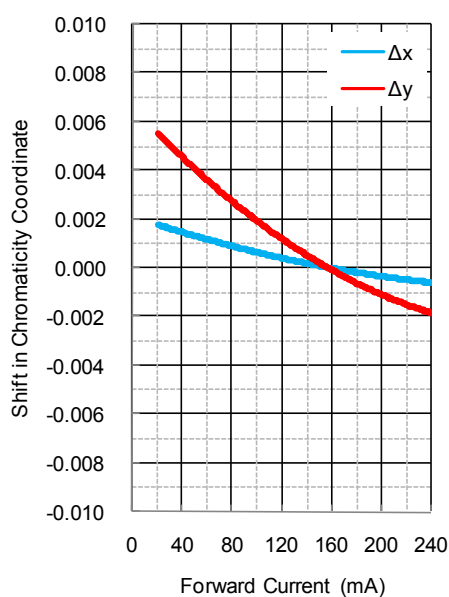
Relative Luminous Flux

$$\Phi_v/\Phi_v(160\text{mA}) = f(I_F); T_J = 25^\circ\text{C}$$



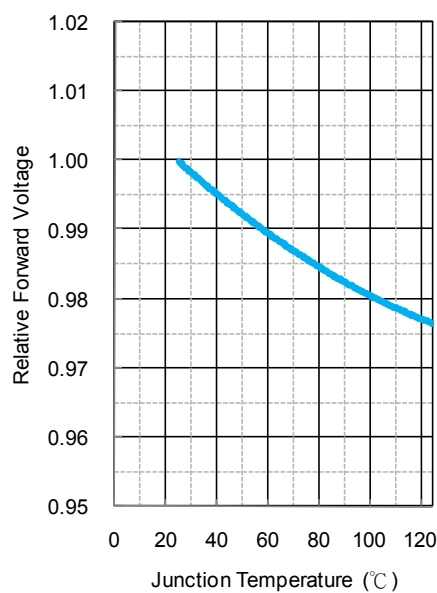
Chromaticity Coordinate Shift

$$\Delta C_x, \Delta C_y = f(I_F); T_J = 25^\circ\text{C}$$



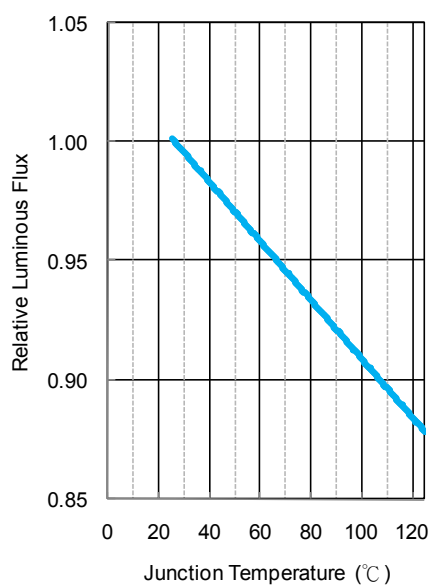
Relative Forward Voltage

$$V_F/V_F(25^\circ\text{C}) = f(V_F); I_F = 160\text{ mA}$$



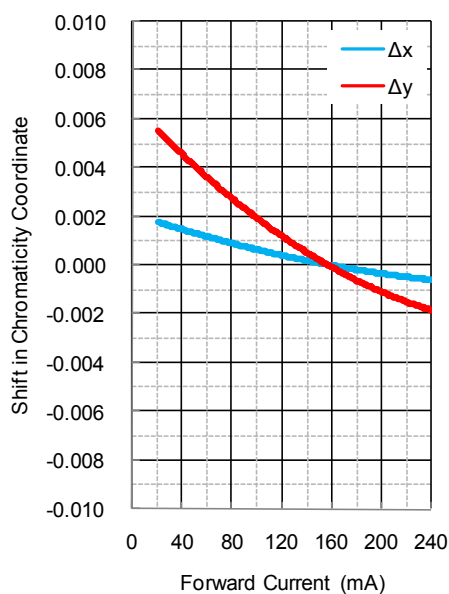
Relative Luminous Flux

$$\Phi_v/\Phi_v(25^\circ\text{C}) = f(T_j); I_F = 160\text{ mA}$$



Chromaticity Coordinate Shift

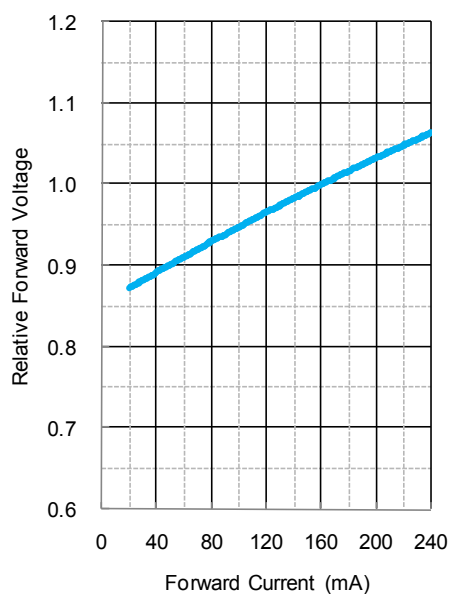
$$\Delta C_x, \Delta C_y = f(T_j); I_F = 160\text{ mA}$$



Characteristic Curves-24V UE

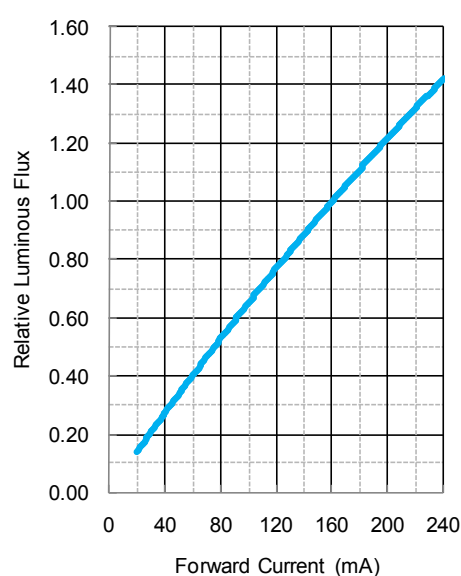
Relative Forward Voltage

$$V_F/V_F(160\text{mA}) = f(V_F); T_J = 25^\circ\text{C}$$



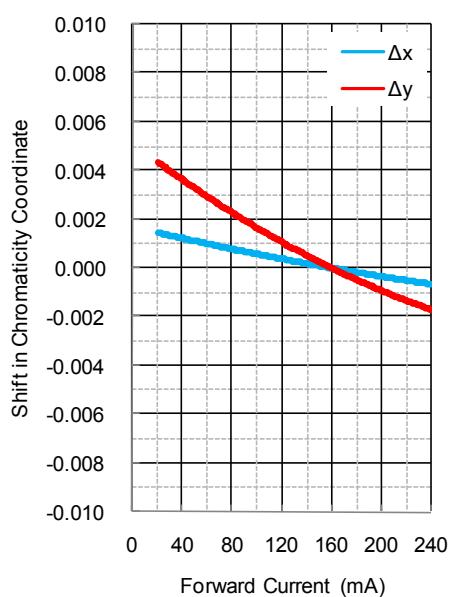
Relative Luminous Flux

$$\Phi_v/\Phi_v(160\text{mA}) = f(I_F); T_J = 25^\circ\text{C}$$



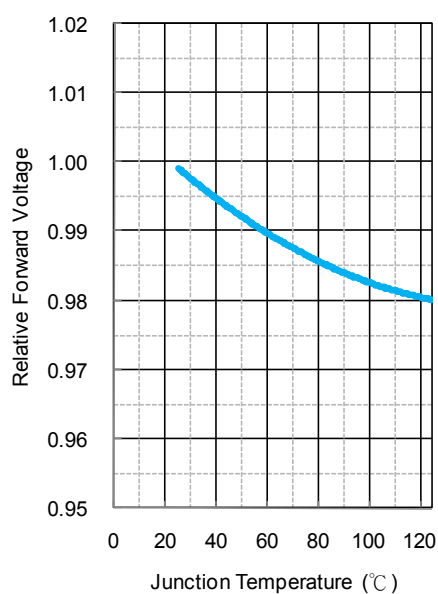
Chromaticity Coordinate Shift

$$\Delta C_x, \Delta C_y = f(I_F); T_J = 25^\circ\text{C}$$



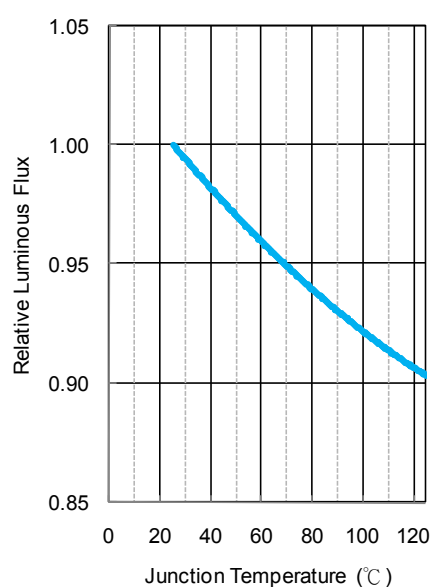
Relative Forward Voltage

$$V_F/V_F(25\text{ }^{\circ}\text{C}) = f(V_F); I_F = 160\text{ mA}$$



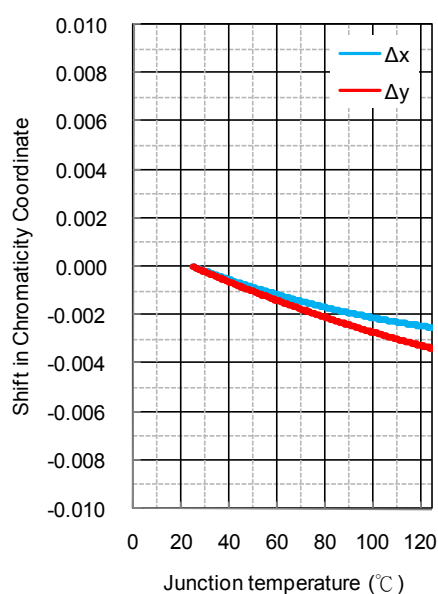
Relative Luminous Flux

$$\Phi_v/\Phi_v(25\text{ }^{\circ}\text{C}) = f(T_j); I_F = 160\text{ mA}$$



Chromaticity Coordinate Shift

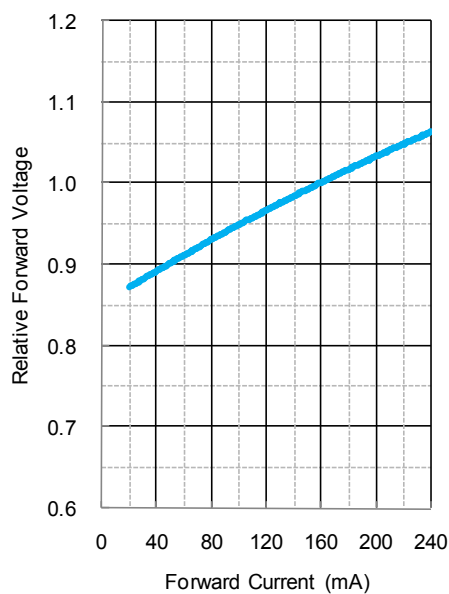
$$\Delta C_x, \Delta C_y = f(T_j); I_F = 160\text{ mA}$$



Characteristic Curves-30V HE

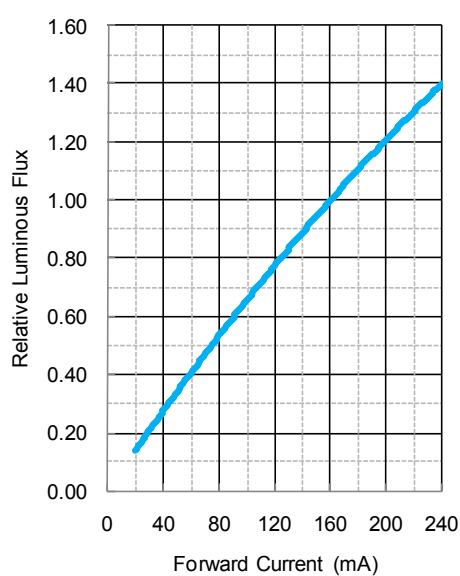
Relative Forward Voltage

$$V_F/V_F(160\text{mA}) = f(V_F); T_J = 25^\circ\text{C}$$



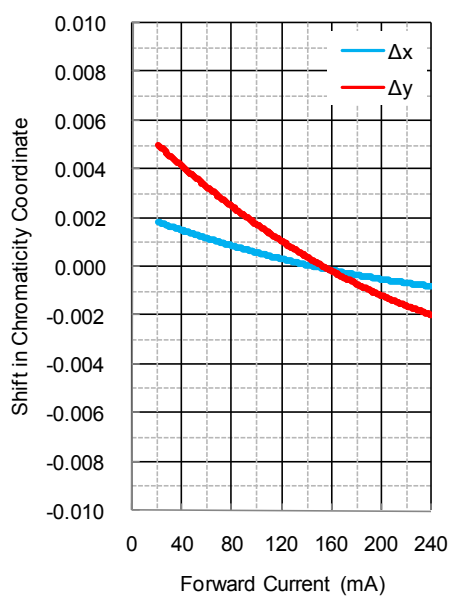
Relative Luminous Flux

$$\Phi_v/\Phi_v(160\text{mA}) = f(I_F); T_J = 25^\circ\text{C}$$



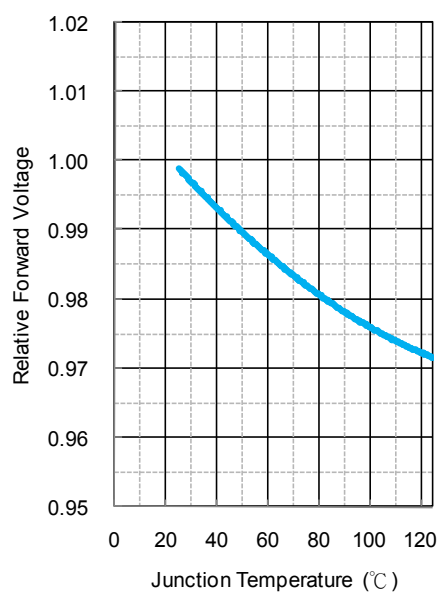
Chromaticity Coordinate Shift

$$\Delta C_x, \Delta C_y = f(I_F); T_J = 25^\circ\text{C}$$



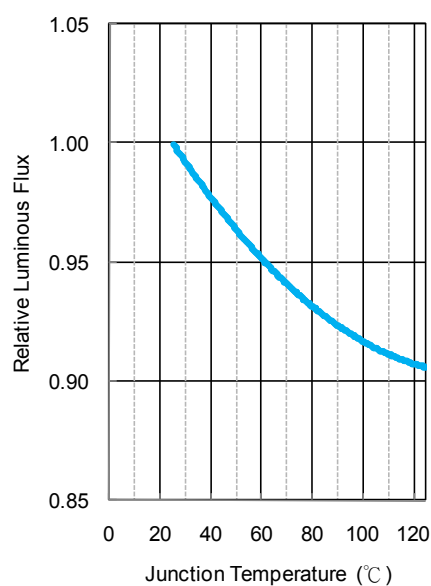
Relative Forward Voltage

$$V_F/V_F(25^\circ\text{C}) = f(V_F); I_F = 160 \text{ mA}$$



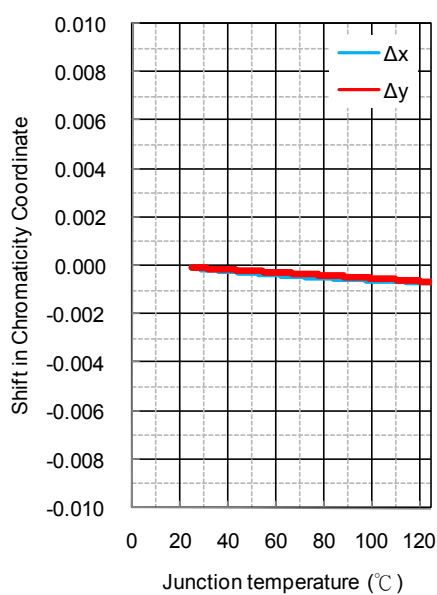
Relative Luminous Flux

$$\Phi_v / \Phi_v(25^\circ\text{C}) = f(T_j); I_F = 160 \text{ mA}$$



Chromaticity Coordinate Shift

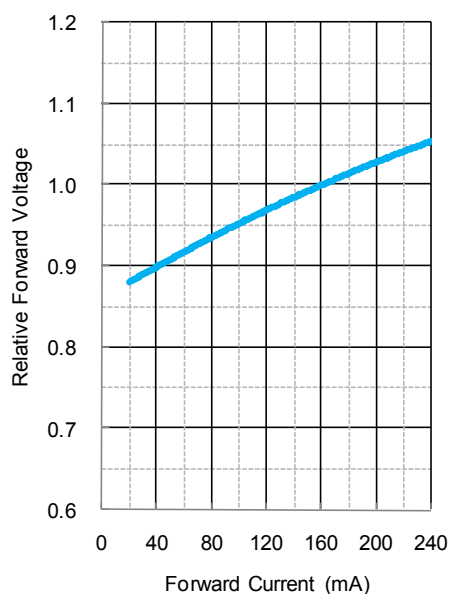
$$\Delta C_x, \Delta C_y = f(T_j); I_F = 160 \text{ mA}$$



Characteristic Curves-30V UE

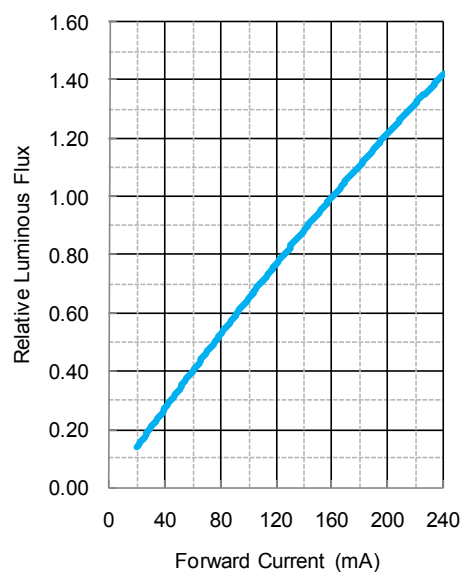
Relative Forward Voltage

$$V_F/V_F(160\text{mA}) = f(V_F); T_J = 25^\circ\text{C}$$



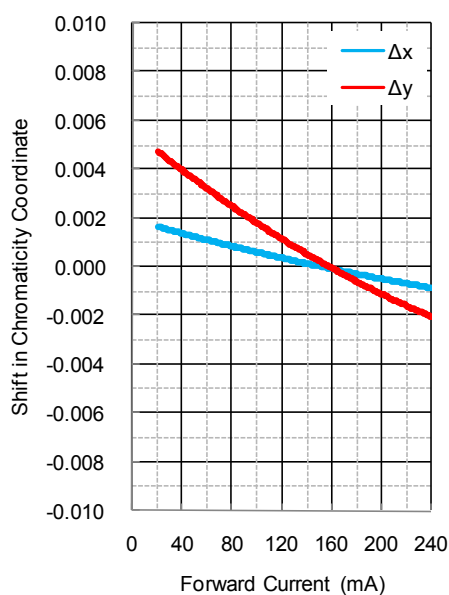
Relative Luminous Flux

$$\Phi_v/\Phi_v(160\text{mA}) = f(I_F); T_J = 25^\circ\text{C}$$



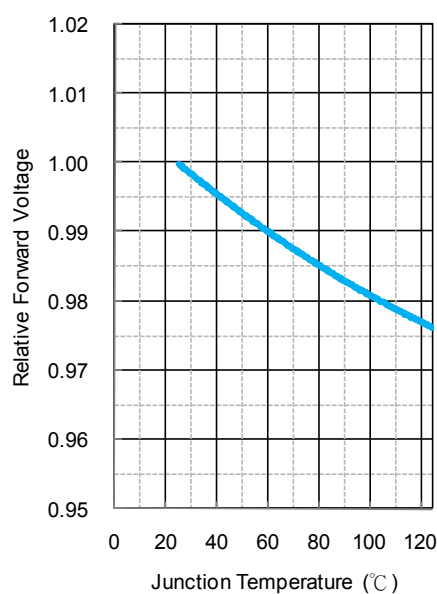
Chromaticity Coordinate Shift

$$\Delta C_x, \Delta C_y = f(I_F); T_J = 25^\circ\text{C}$$



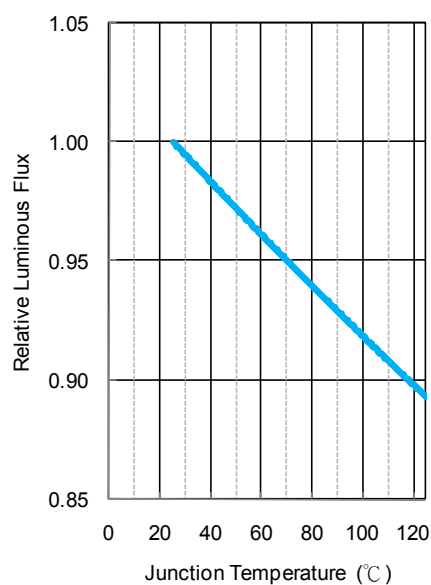
Relative Forward Voltage

$$V_F/V_F(25^\circ\text{C}) = f(V_F); I_F = 160 \text{ mA}$$



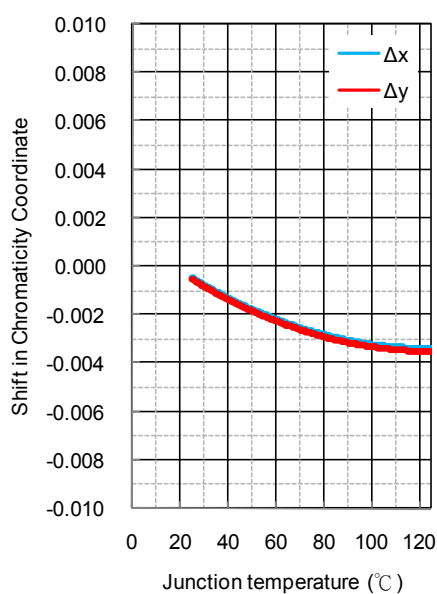
Relative Luminous Flux

$$\Phi_v/\Phi_v(25^\circ\text{C}) = f(T_j); I_F = 160 \text{ mA}$$



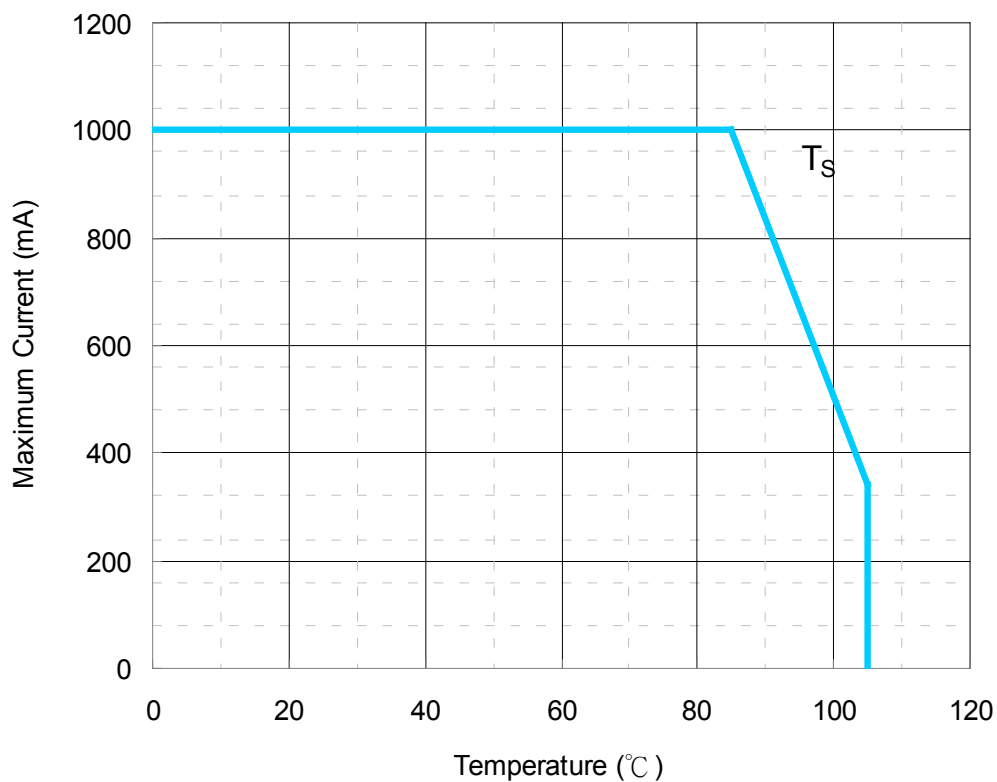
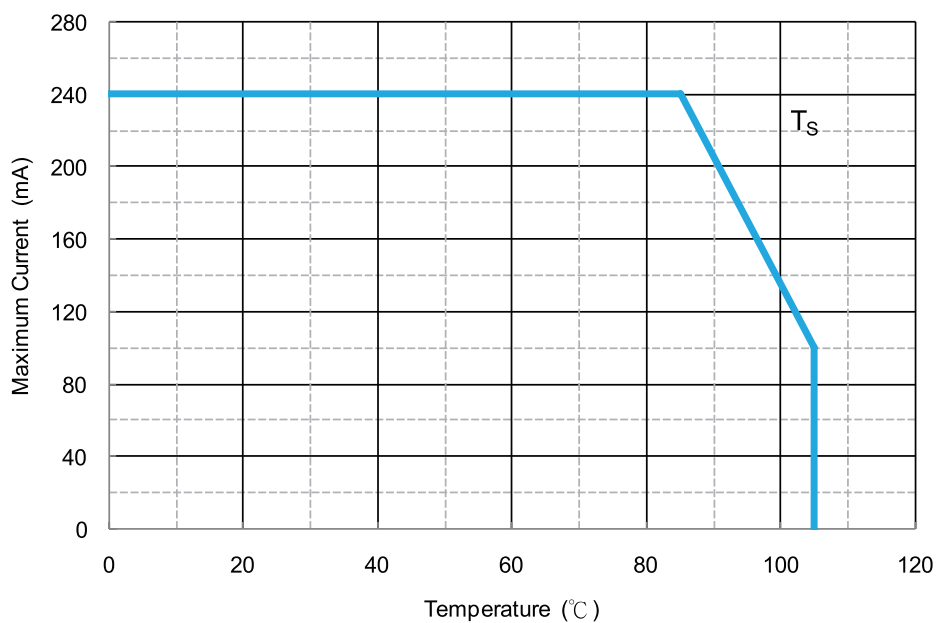
Chromaticity Coordinate Shift

$$\Delta C_x, \Delta C_y = f(T_j); I_F = 160 \text{ mA}$$



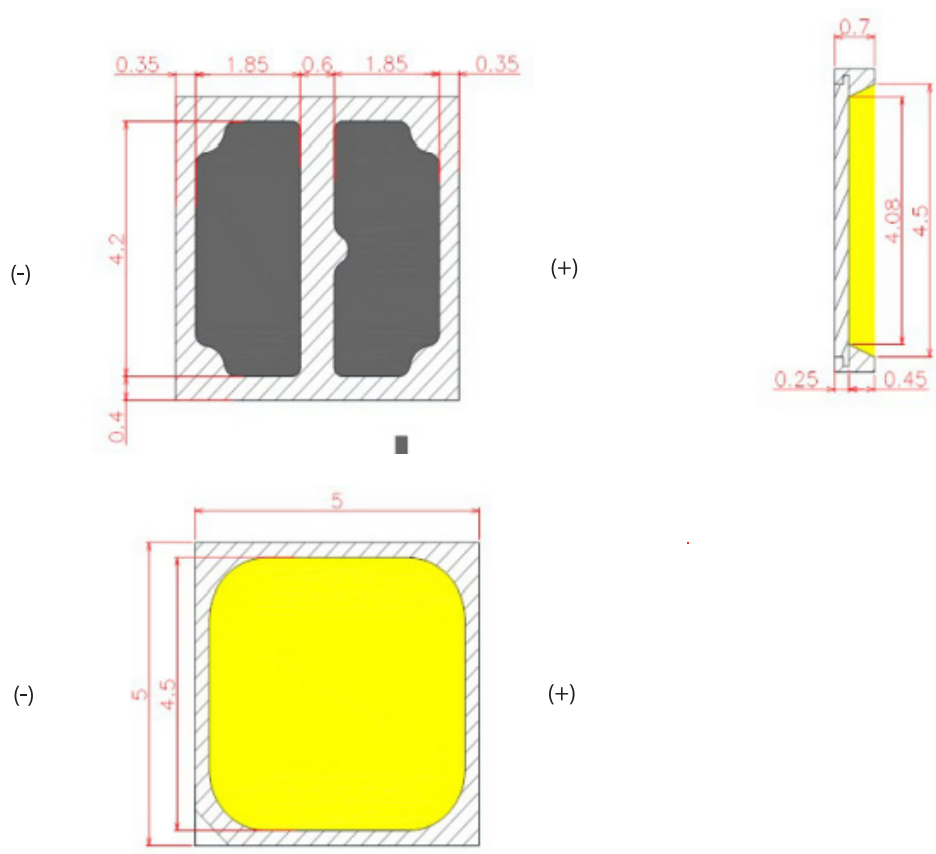
Max. Permissible Forward Current

$$I_F = f(T)$$



Mechanical Dimensions

Dimensional Drawing

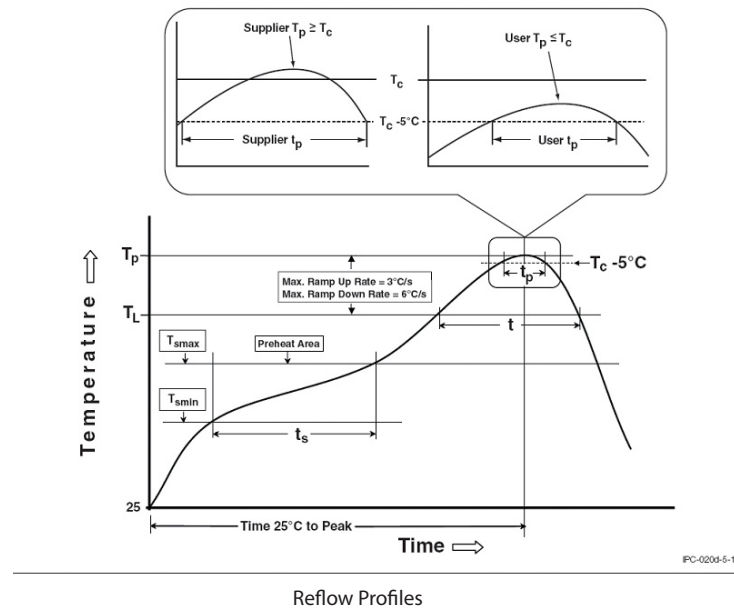


Notes:

1. All dimensions are measured in mm.
2. Tolerance : ± 0.1 mm

Reflow Profile

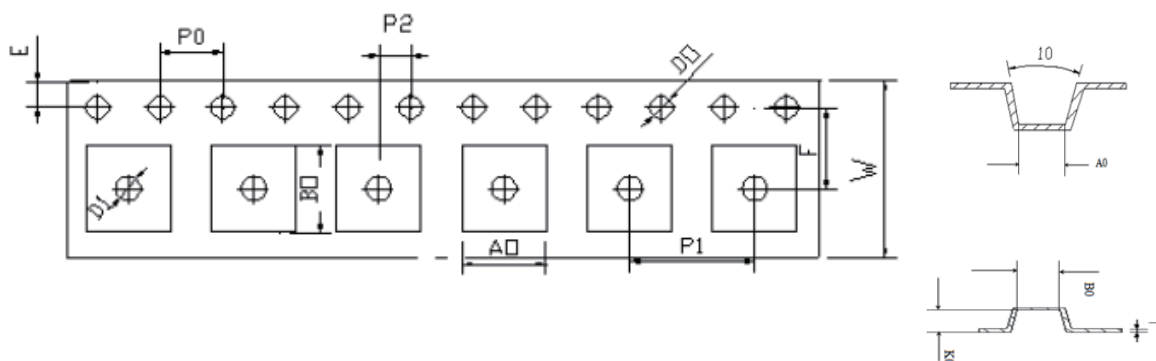
The following reflow profile is from IPC/JEDEC J-STD-020D which provided here for reference.



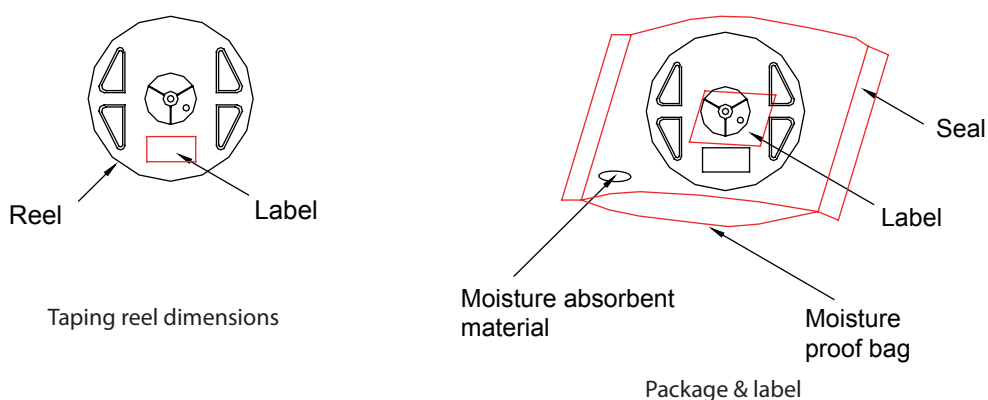
Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat & Soak Temperature min (T_{smin}) Temperature max (T_{smax}) Time (T_{smin} to T_{smax}) (t_s)	150 °C 200 °C 60-120 seconds
Average ramp-up rate (T_{smax} to T_p)	3 °C/second max.
Liquidous temperature (T_L) Time at liquidous (t_L)	217 °C 60-150 seconds
Peak package body temperature (T_p)	255 °C ~260 °C
Classification temperature (T_c)	260 °C
Time (t_p) within 5 °C of the specified classification temperature (T_c)	30 seconds
Average ramp-down rate (T_p to T_{smax})	6°C/second max.
Time 25°C to peak temperature	8 minutes max.

Product Packaging Information



W	12.0±0.10	E	1.75±0.10	P0	4.00±0.10	A0	5.35±0.10	单位
T	0.20±0.05	F	5.50±0.10	P1	8.00±0.10	BO	5.40±0.10	MM
D1	1.60±0.05	DO	1.60±0.05	P2	2.00±0.05	KO	0.95±0.10	



Item	Quantity	Total	Dimensions(mm)
Reel1	1,000pcs	1,000pcs	R=178
Starting with 150pcs empty,and 120pcs empty at the last			

Cautions

(1) Moisture monitoring is vital during the storage of LEDs for if too much moisture is absorbed, interface delamination and optical performance degradation will occur. Therefore, products should be packed in moisture-proof aluminum bags so as to reduce moisture absorption to the lowest degree during transportation and storage. Included moisture-proof aluminum bag are the key indicators that they will change from brown to azure if bags are invaded by moisture.

(2) Soldering process in compliance with the range of the conditions stated above should be conducted after opening the moisture-proof aluminum bag. The rest LEDs should be stored in a hermetically sealed container, silica gel desiccants included. And the original moisture-proof aluminum bags are recommended.

(3) If the "Period After Opening" storage time is too long or silica gel desiccants don't maintain blue any more, baking process should be done once.

Conditions		Temperature	Humidity	Time
Storage	After Opening Aluminum Bag	$\leq 30^{\circ}\text{C}$	$\leq 60\%\text{RH}$	$\leq 168\text{hrs}$
Baking		$65 \pm 5^{\circ}\text{C}$	-	$\geq 24\text{hrs}$

Revision History

Versions	Description	Release Date
1	Establish a Datasheet	2023/05/22
2	Update the Electro-Optical Characteristics	2023/11/29

About Edison Opto

Edison Opto is a leading manufacturer of high power LED and a solution provider experienced in LDMS. LDMS is an integrated program derived from the four essential technologies in LED lighting applications- Thermal Management, Electrical Scheme, Mechanical Refinement, Optical Optimization, to provide customer with various LED components and modules. More Information about the company and our products can be found at www.edison-opto.com

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