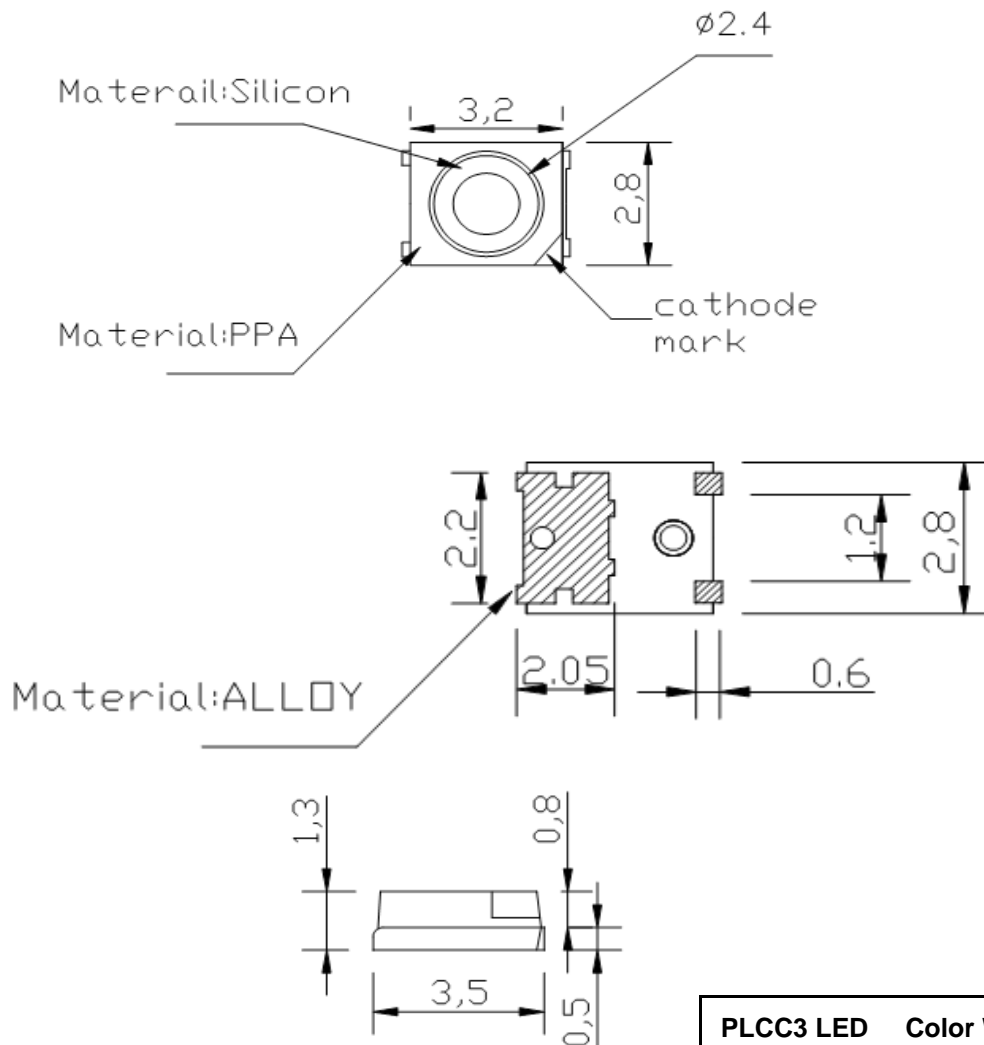




### Applications

- Interior automotive lighting(dashboard backlight etc...)
- Optical indicators
- Communication Products
- Backlighting
- Toys
- Traffic Signal

### Package Dimensions



**Notes:**

All dimensions in mm tolerance is  $\pm 0.1$ mm unless otherwise noted.

<b>PLCC3 LED Color Warm White</b>	
Part No.:	<b>M11A4004</b>
Customer:	

DRW:	Harry	CHKD	Dustin	MATL	Wilson	TOLERANCE	Mason	DATE 24.07.2009
APPD:	Jason			FINISH	John		Sheet No.	1 from 12



**Absolute Maximum Ratings (Ta = 25°C)**

Parameter	Symbol	Value	Unit
Forward Current	If	150	mA
Power Dissipation	PD	0,5	W
Junction Temperature	TJ	125	°C
Operating Temperature	Topr	-30° ~ +85°C	°C
Storage Temperature	Tstg	-40° ~ +120°C	°C

\*Pulse width ≤0.1msec duty ≤1/10

**Typical Electrical & Optical Characteristics (IF=20mA and Ta = 25°C)**

M11A4004	Code	Color Rank			
Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Muminous Flux		21	27	----	Lm
Correlated Color Temp.	CCT	----	4000	----	K
CRI	Ra	70	75	----	---
Forward Voltage	Vf	----	3,2	4,5	V
View Angle	20 1/2	120			deg.

**Ranks Combination (IF = 20mA)**

Rank			
Luminious Intensity			

**Notes:**

1. Tolerance of measurement of luminous intensity	: ±15%	<b>PLCC3 LED Color Warm White</b>
2. Tolerance of measurement of chromatic coordinates	: ±0.02	
3. Tolerance of measurement of forward voltage	: ±0.1V	

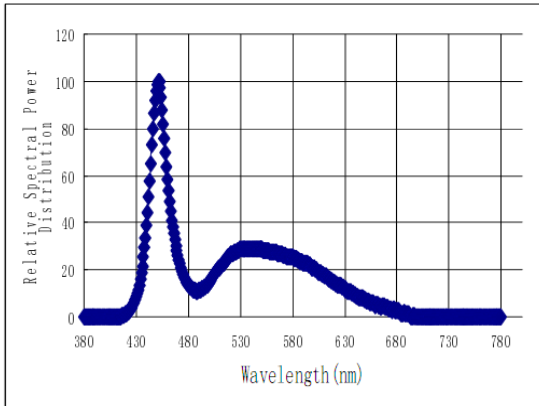
Part No.: **M11A4004**

Customer:

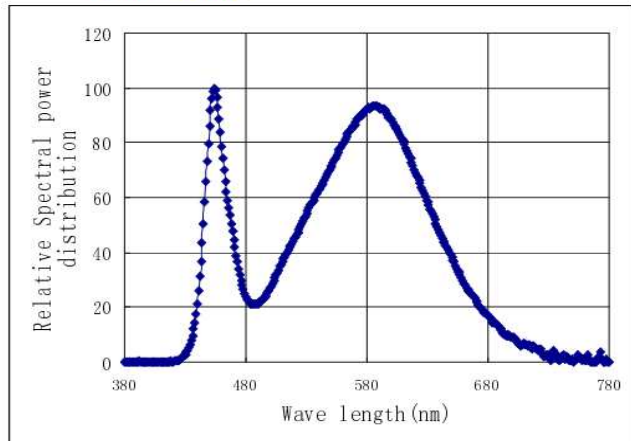
DRW:	Harry	CHKD	Dustin	MATL	Wilson	TOLERANCE	Mason	DATE 24.07.2009
APPD:	Jason			FINISH	John		Sheet No.	2 from 12



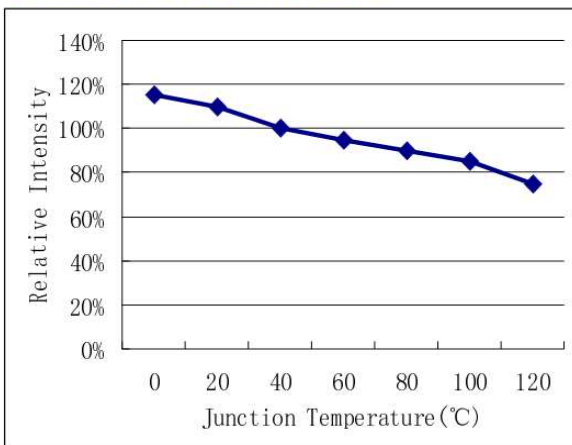
**White color spectrum, TA=25°C  
 Pure White**



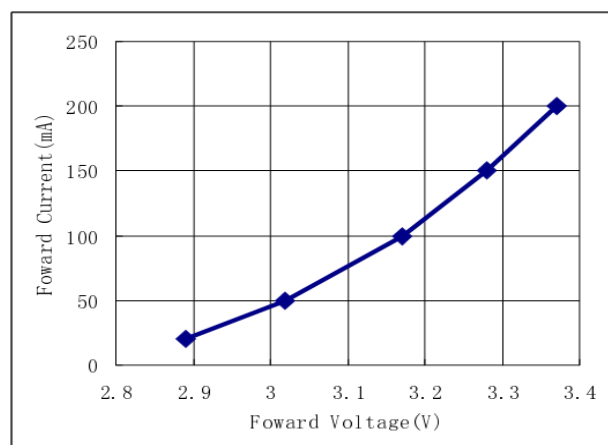
**Warm white**



**Relative Light Output vs. Junction Temperature  
 (All series) at IF=150mA, TA=25°C**



**Forward Voltage vs. Forward Current, TA=25°C  
 (Pure white, Warm white, blue and green)**



**PLCC3 LED Color Warm White**

Part No.: **M11A4004**

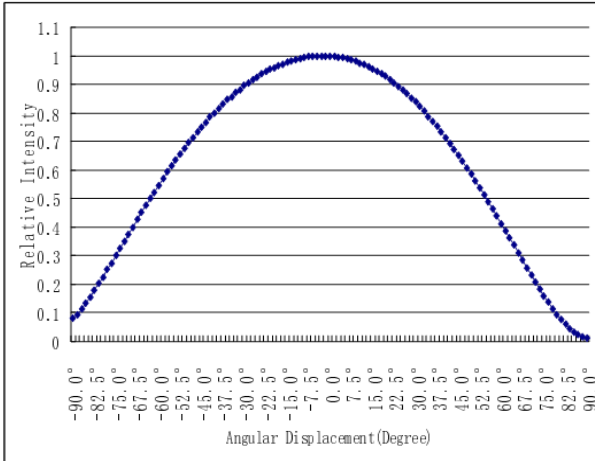
Customer:

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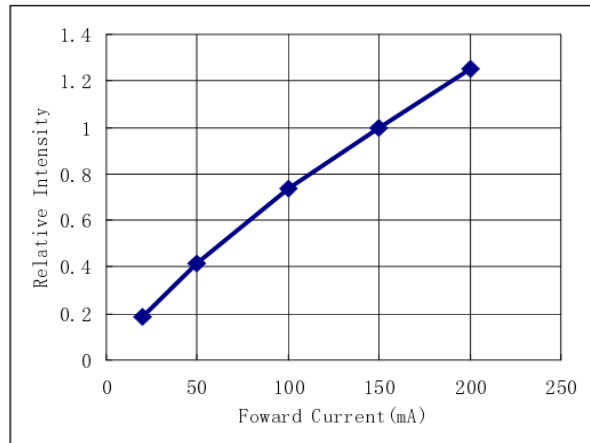


**Typical Electrical/ Optical Characteristics Curves (Ta=25°C Unless Otherwise Noted)**

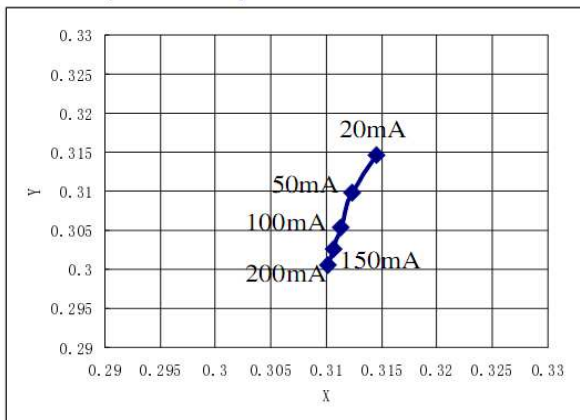
**Typical Radiation(All series)**



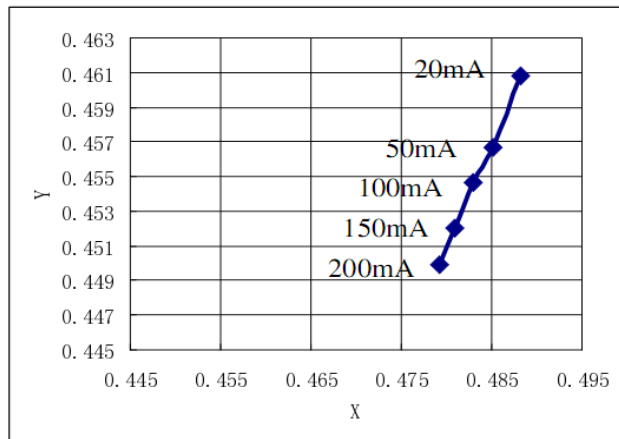
**Forward Current VS Relative Luminosity(All series)**



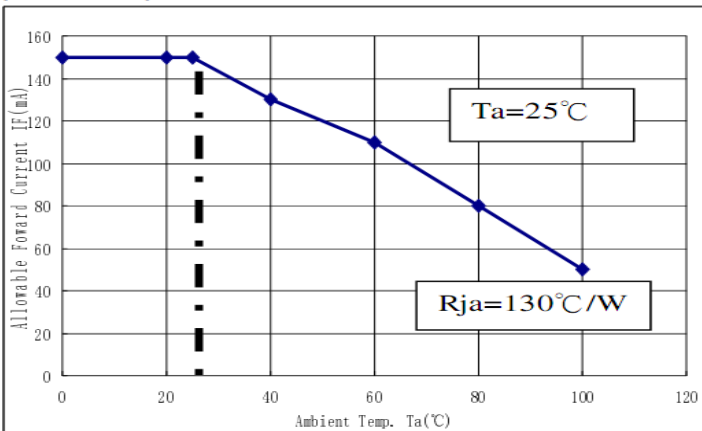
**Forward Current VS Chromaticity Coordinate: TA=25°C (Pure white)**



**Forward Current VS Chromaticity Coordinate: TA=25°C (Warm white)**



**Ambient Temperature. VS Allowable Forward Current (All series)**



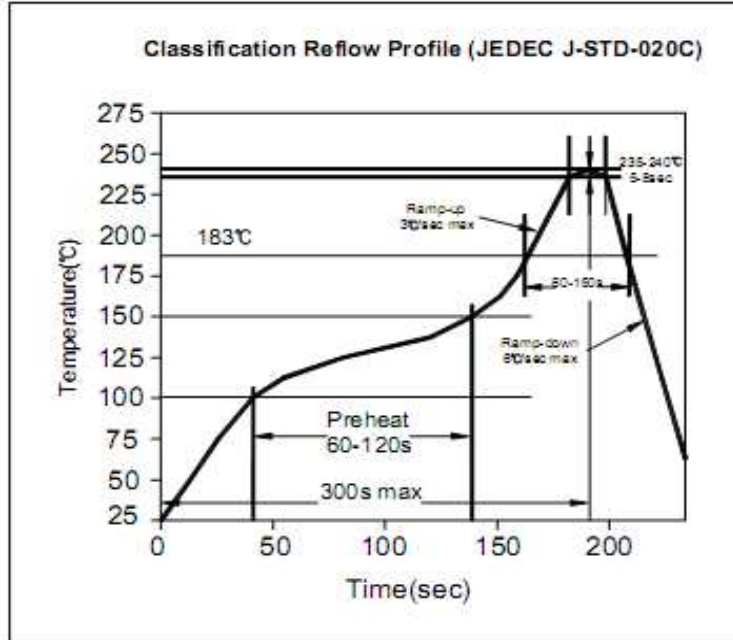
<b>PLCC3 LED Color Warm White</b>	
Part No.:	<b>M11A4004</b>
Customer:	

DRW:	Harry	CHKD	Dustin	MATL	Wilson	TOLERANCE	Mason	DATE 24.07.2009
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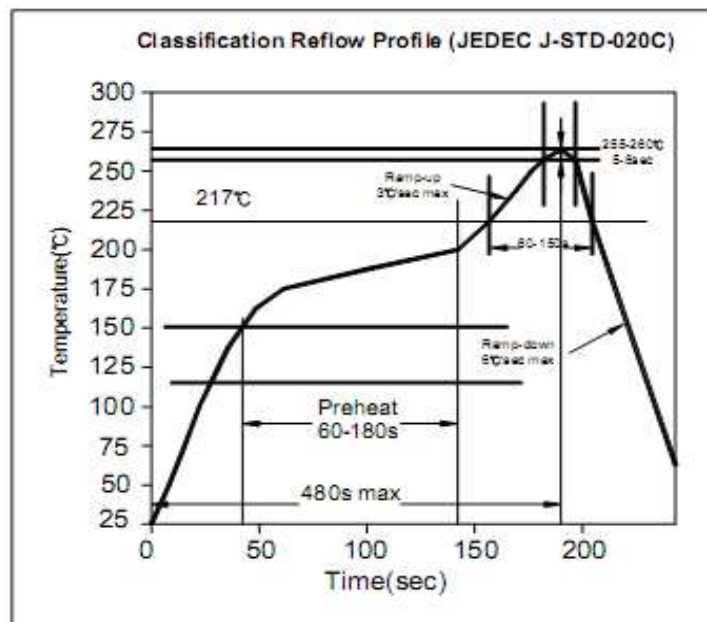


**Solder Condition**

**Lead solder**



**Lead free solder**

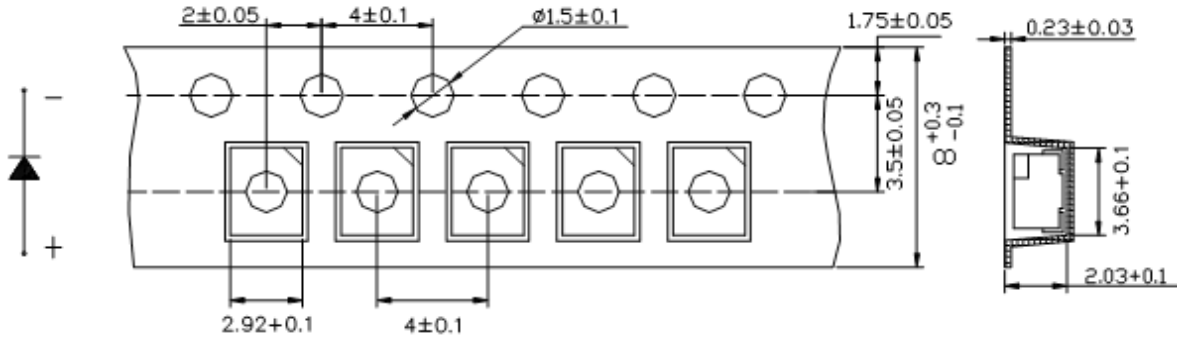


<b>PLCC3 LED Color Warm White</b>	
Part No.:	<b>M11A4004</b>
Customer:	

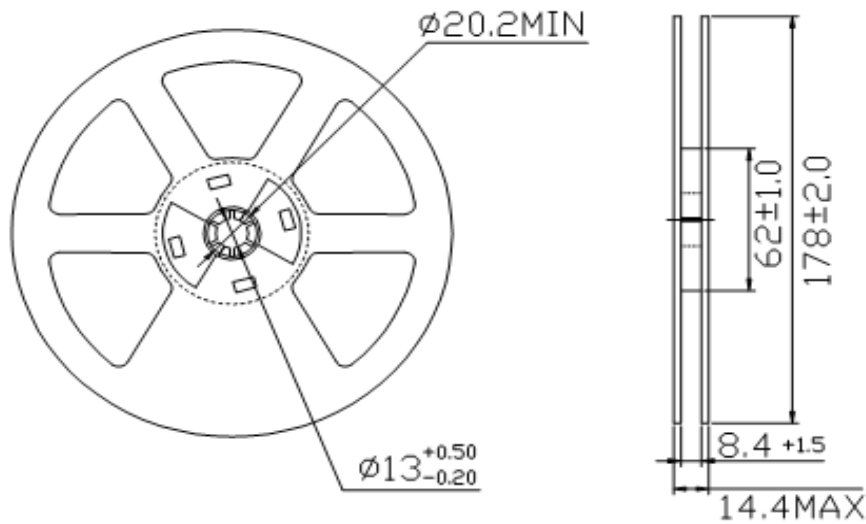
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APPD:	Jason			FINISH	John		Sheet No.	5 from 12



**Packing Specifications:**



**Reel Specifications**



Dimensions are specified as follows: mm

Notes:

- 1) The packing only appropriate for PLCC3
- 2) Normal packing quantity: 2,000pcs/reel

<b>PLCC3 LED Color Warm White</b>	
Part No.:	<b>M11A4004</b>
Customer:	

DRW:	Harry	CHKD	Dustin	MATL	Wilson	TOLERANCE	Mason	DATE 24.07.2009
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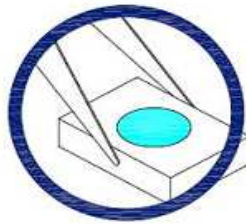




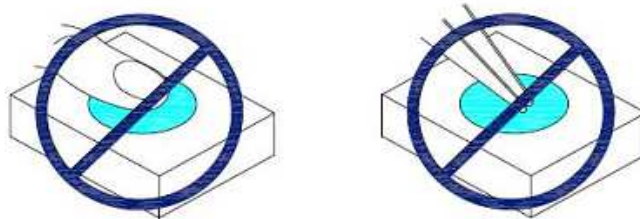
**Handling Precautions**

Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force. As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might leads to damage and premature failure of the LED.

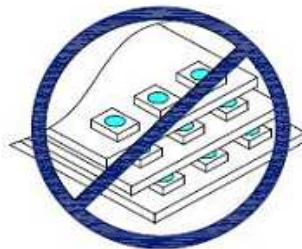
1. Handle the component along the side surfaces by using forceps or appropriate tools.



2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.



3. Do not stack together assembled PCBs containing exposed LEDs. Outside impact may scratch the silicone lens or damage the internal circuitry.



4. The outer diameter of the TOP LED pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible.

<b>PLCC3 LED Color Warm White</b>	
Part No.:	<b>M11A4004</b>
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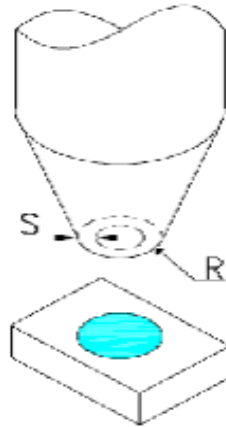






5. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.

6. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.



<b>PLCC3 LED Color Warm White</b>	
Part No.:	<b>M11A4004</b>
Customer:	

DRW:	Harry	CHKD	Dustin	MATL	Wilson	TOLERANCE	Mason	DATE 24.07.2009
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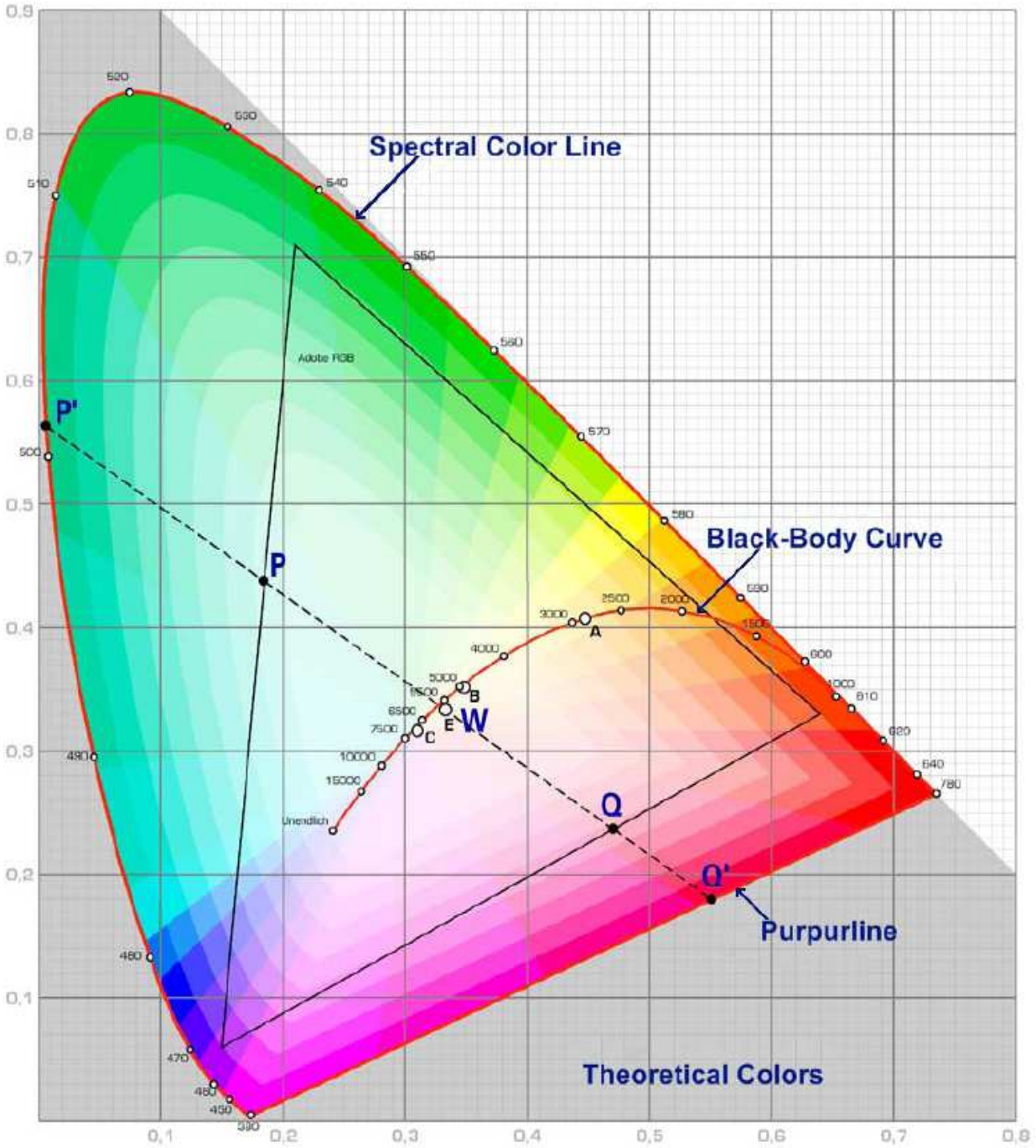
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**Color table curve**



<b>PLCC3 LED Color Warm White</b>	
Part No.:	<b>M11A4004</b>
Customer:	

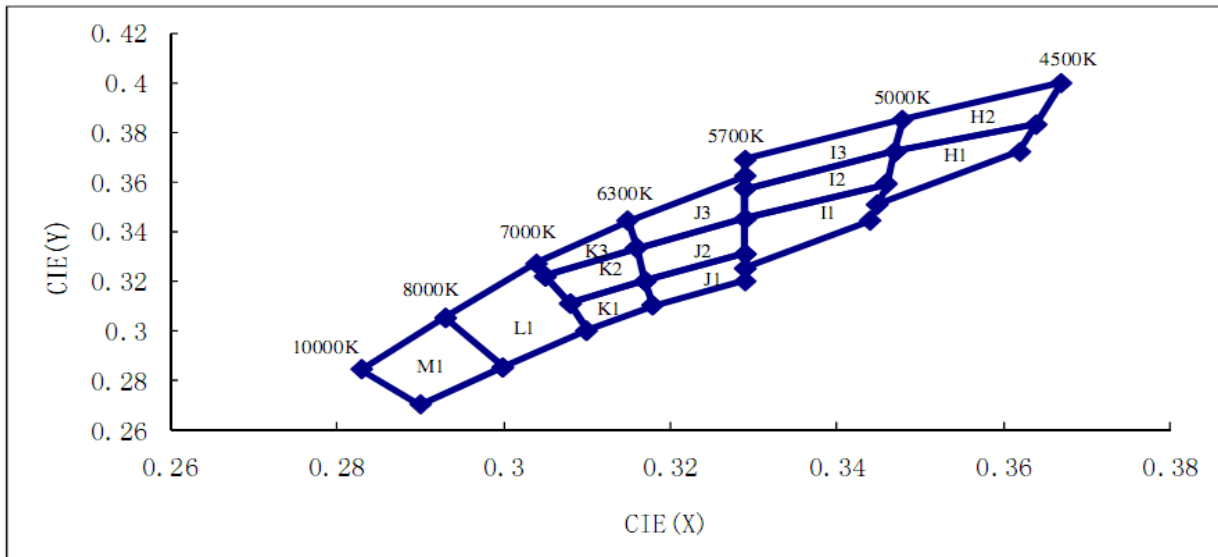
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BIN	CHR-X	CHR-Y	TC(K)	BIN	CHR-X	CHR-Y	TC(K)
M1	0.293	0.305	9000	J1	0.329	0.331	6050
	0.283	0.284			0.317	0.32	
	0.29	0.27			0.318	0.31	
	0.3	0.285			0.329	0.32	
L1	0.304	0.327	7500	I3	0.329	0.325	5350
	0.293	0.305			0.348	0.385	
	0.3	0.285			0.329	0.369	
	0.31	0.3			0.329	0.362	
K3	0.308	0.311	6700	I2	0.329	0.357	5350
	0.305	0.322			0.347	0.372	
	0.316	0.333			0.347	0.372	
	0.316	0.333			0.329	0.357	
K2	0.305	0.322	6700	I1	0.329	0.345	5350
	0.308	0.311			0.346	0.359	
	0.317	0.32			0.329	0.345	
	0.317	0.32			0.329	0.331	
K1	0.308	0.311	6700	H2	0.329	0.325	4800
	0.31	0.3			0.344	0.344	
	0.318	0.31			0.345	0.351	
	0.318	0.31			0.367	0.4	
J3	0.329	0.362	6050	H1	0.348	0.385	4800
	0.315	0.344			0.347	0.372	
	0.316	0.333			0.364	0.383	
	0.329	0.345			0.364	0.383	
J2	0.329	0.357	6050	H1	0.347	0.372	4800
	0.329	0.345			0.346	0.359	
	0.316	0.333			0.345	0.351	
	0.317	0.32			0.362	0.372	
	0.329	0.331					

**Remark :** J1 J2 K1 K2 I1 (White and lightly Purplish) J2 J3 K2 K3 (White and lightly Yellowish)  
I2 I3 H1 H2 (White and deeply Yellowish) Customer can choose any group

**PLCC3 LED Color Warm White**

Part No.: **M11A4004**

Customer:

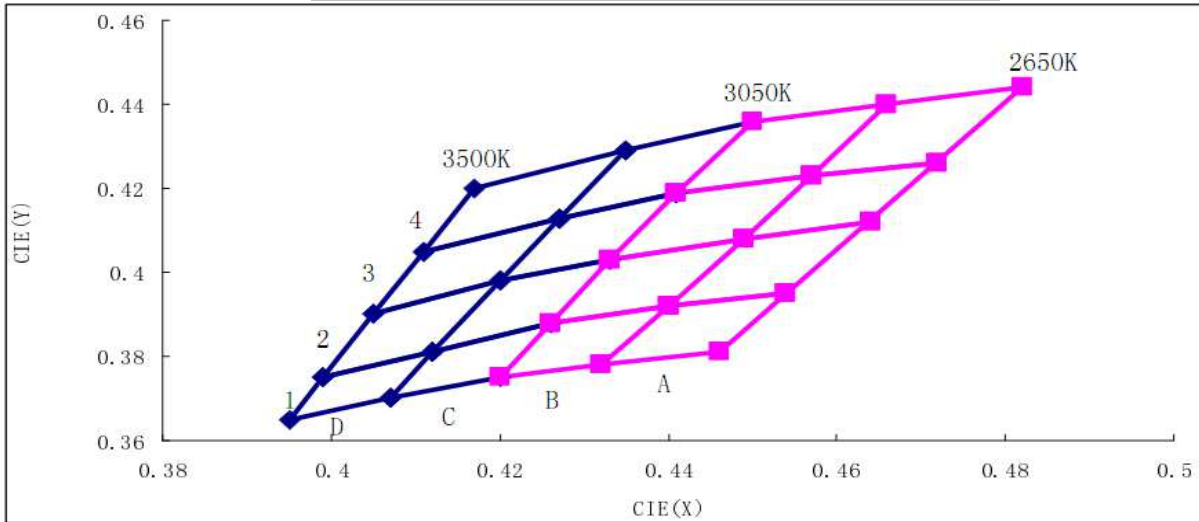
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BIN	CHR-X	CHR-Y	TC (K)	BIN	CHR-X	CHR-Y	TC (K)
D4	0.435	0.429	3375	B4	0.466	0.44	2950
	0.417	0.42			0.45	0.436	
	0.411	0.405			0.441	0.419	
	0.427	0.413			0.457	0.423	
D3	0.411	0.405	3375	B3	0.457	0.423	2950
	0.427	0.413			0.441	0.419	
	0.405	0.39			0.433	0.403	
	0.42	0.398			0.449	0.408	
D2	0.42	0.398	3375	B2	0.449	0.408	2950
	0.405	0.39			0.433	0.403	
	0.399	0.375			0.426	0.388	
	0.412	0.381			0.44	0.392	
D1	0.412	0.381	3375	B1	0.44	0.392	2950
	0.399	0.375			0.426	0.388	
	0.395	0.365			0.42	0.375	
	0.407	0.37			0.432	0.378	
C4	0.45	0.436	3250	A4	0.482	0.444	2750
	0.435	0.429			0.466	0.44	
	0.427	0.413			0.457	0.423	
	0.441	0.419			0.472	0.426	
C3	0.441	0.419	3150	A3	0.472	0.426	2750
	0.427	0.413			0.457	0.423	
	0.42	0.398			0.449	0.408	
	0.433	0.403			0.464	0.412	
C2	0.433	0.403	3150	A2	0.464	0.412	2750
	0.42	0.398			0.449	0.408	
	0.412	0.381			0.44	0.392	
	0.426	0.388			0.454	0.395	
C1	0.426	0.388	3150	A1	0.454	0.395	2750
	0.412	0.381			0.44	0.392	
	0.407	0.37			0.432	0.378	
	0.42	0.375			0.446	0.381	

**PLCC3 LED Color Warm White**

Part No.: **M11A4004**

Customer:

DRW:	Harry	CHKD	Dustin	MATL	Wilson	TOLERANCE	Mason	DATE 24.07.2009
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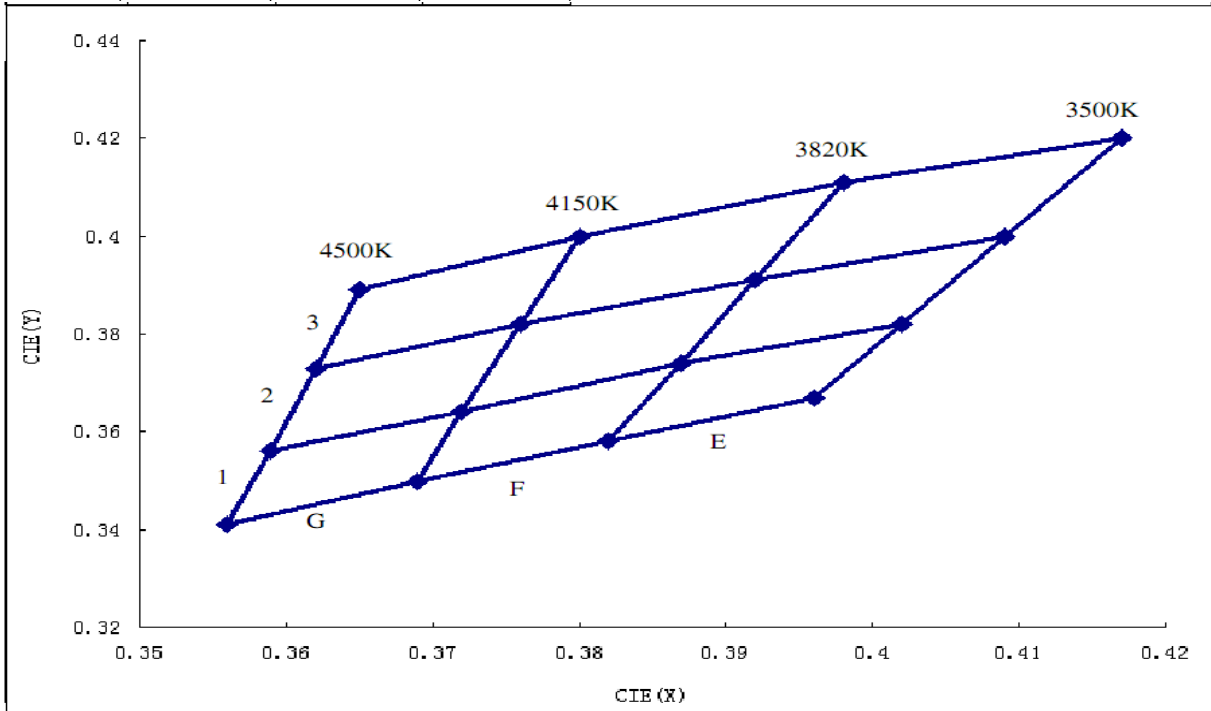
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BIN	CHR-X	CHR-Y	TC (K)	BIN	CHR-X	CHR-Y	TC (K)
G3	0.38	0.4	4325	F1	0.387	0.374	3985
	0.365	0.389			0.372	0.364	
	0.362	0.373			0.369	0.35	
	0.376	0.382			0.382	0.358	
G2	0.376	0.382	4325	E3	0.417	0.42	3660
	0.362	0.373			0.398	0.411	
	0.359	0.356			0.392	0.391	
	0.372	0.364			0.409	0.4	
G1	0.372	0.364	4325	E2	0.409	0.4	3660
	0.359	0.356			0.392	0.391	
	0.356	0.341			0.387	0.374	
	0.369	0.35			0.402	0.382	
F3	0.398	0.411	3985	E1	0.402	0.382	3660
	0.38	0.4			0.387	0.374	
	0.376	0.382			0.382	0.358	
	0.392	0.391			0.396	0.367	
F2	0.392	0.391	3985				
	0.376	0.382					
	0.372	0.364					
	0.387	0.374					



<b>PLCC3 LED Color Warm White</b>	
Part No.:	<b>M11A4004</b>
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DRW:	Harry	CHKD	Dustin	MATL	Wilson	TOLERANCE	Mason	DATE 24.07.2009
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