



DATA SHEET

● **DEVICE NUMBER : BWL-8B5N21-RW20**

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2009.02.10	1.0	1.0	1.0	1.0	1.0	1.0								Preliminary

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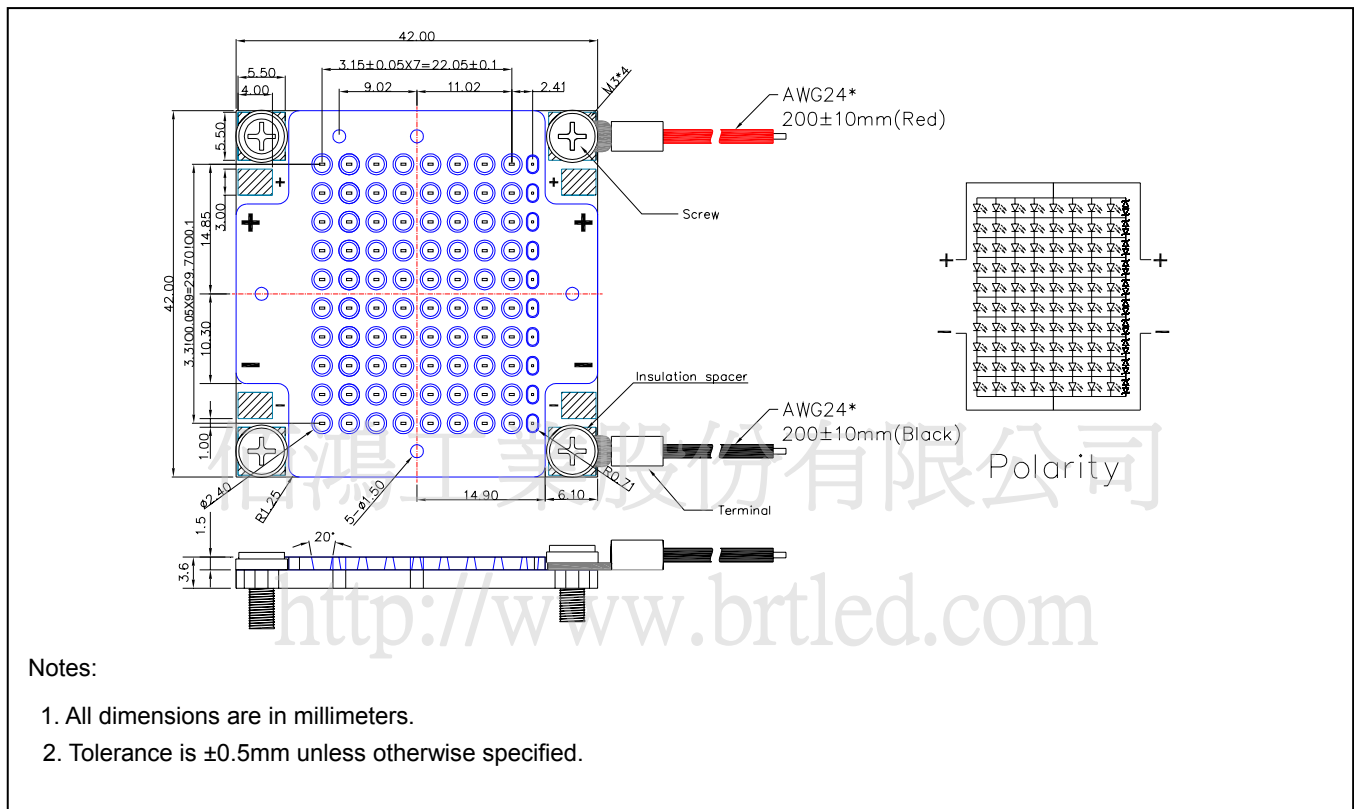
● Features:

1. Constant current supply: 160mA (at 36 V DC, max.)
2. Input power: 5 W.
3. Chip material: InGaN.
4. Emitted color: Natural White.
5. High lumen output.
6. High light output efficiency (lm/w).
7. Excellent thermal management: Self-mounted on Al MCPCB.
8. Easy to be assemblies with heat sink.
9. Long life (if the temperature of the Al MCPCB (Tp) is kept under 50 , by using a suitable heat sink).
10. As a lighting board install, the prepared components bag should be applied. Avoiding the short damage of electrical circuit, insulating washers are required to apply. Please refer to the components assembling demonstration in Page 4.
11. This product do not contain restricted substance, compliance to ROHS standard.

● Applications:

1. Outdoor Lightings: street light, tunnel light.
2. Indoor Lightings: Recessed can light, suspension ceiling light, wall light.

● Package dimensions :



Notes:

1. All dimensions are in millimeters.
2. Tolerance is ± 0.5 mm unless otherwise specified.

● Absolute maximum ratings

Parameter	Symbol	Rating	Unit
DC Input Forward Current *	I_{IN}	180	mA
Power Dissipation	P_D	5	W
Reverse input voltage	V_r	36	V DC
ESD	HBM	2000	V
Storage Temperature	T_{stg}	-40~80	
Temperature of Al MCPCB	T_p	70	

* Proper current derating must be followed to keep the temperature of Al MCPCB(T_p) below 70 .

● Electrical & Optical Characteristics ($T_p=25^{\circ}C$)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage*	V_F	$I_F = 160mA$	-	-	36	V
Total Flux	Φ_v	$I_F = 160mA$	-	350	-	lm
Light Efficient	η	$I_F = 160mA$	-	70	-	lm/W
Color Temperature	CCT	$I_F = 160mA$	3710	-	4745	K
Viewing Angle	$2\theta_{1/2}$	$I_F = 160mA$	-	120	-	degree
Life Time	t	at $T_p \leq 50$	-	30,000	-	hrs

* A power supply with maximum constant current source of 160mA is highly recommended.

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● Typical electro-optical characteristics curves

Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

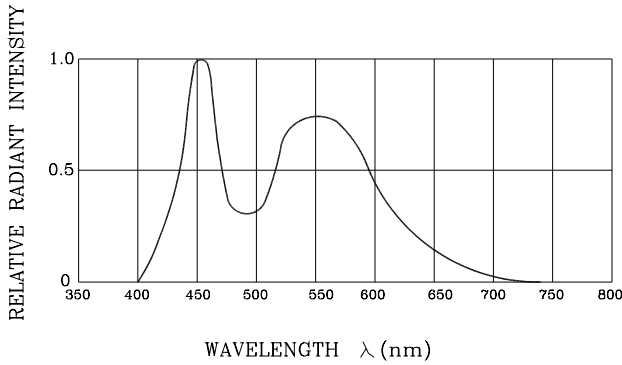


Fig.2 FORWARD CURRENT VS. AMBIENT TEMPERATURE

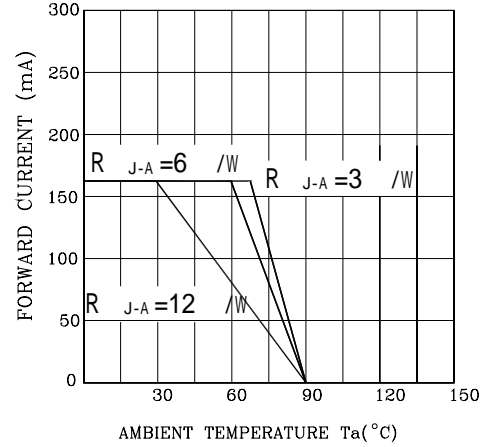


Fig.3 FORWARD CURRENT VS. FORWARD VOLTAGE

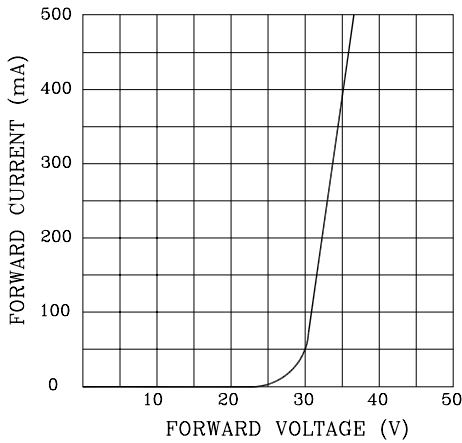


Fig.4 RELATIVE LUMINOUS INTENSITY VS. JUNCTION TEMPERATURE

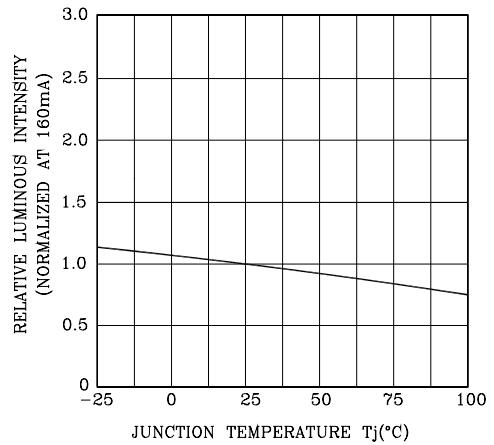


Fig.5 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

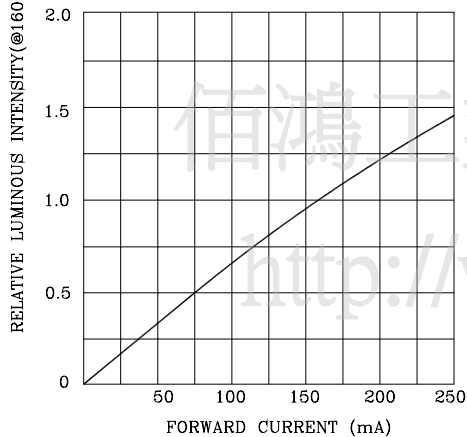
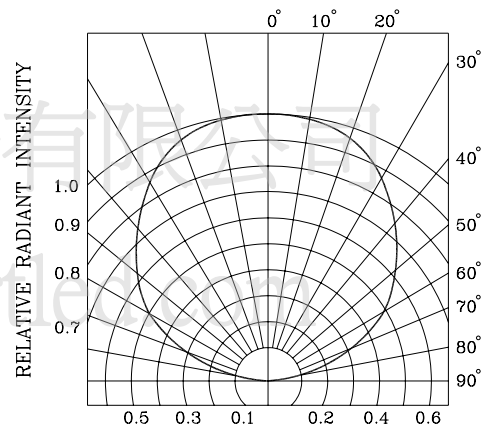
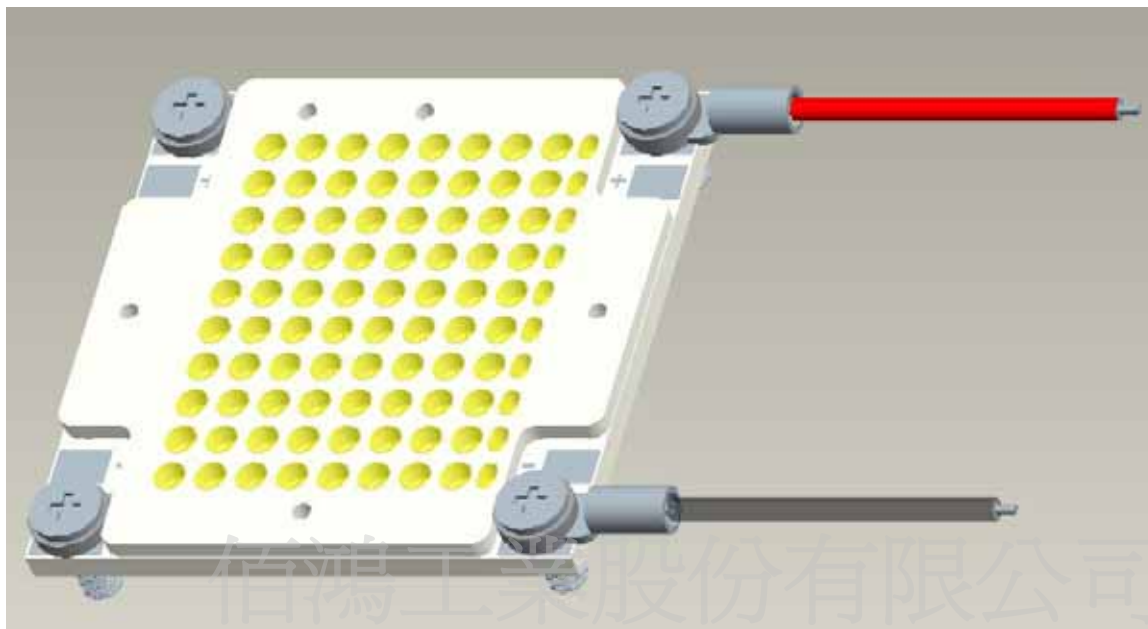
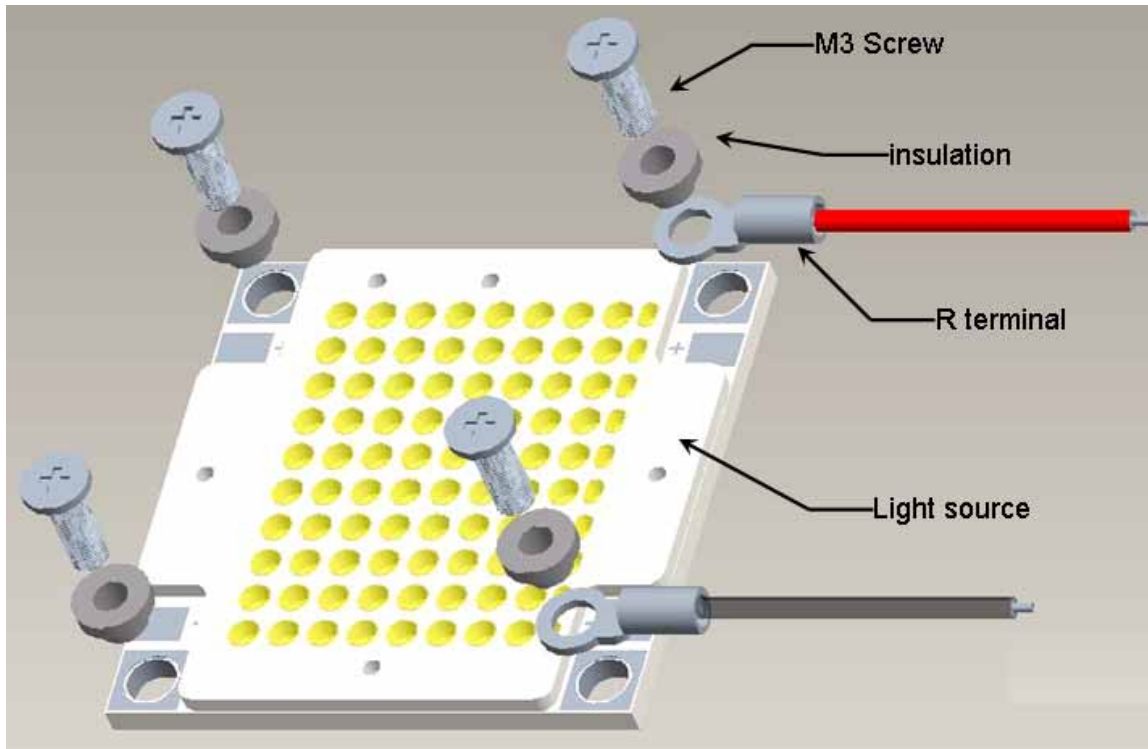


Fig.6 RADIATION DIAGRAM



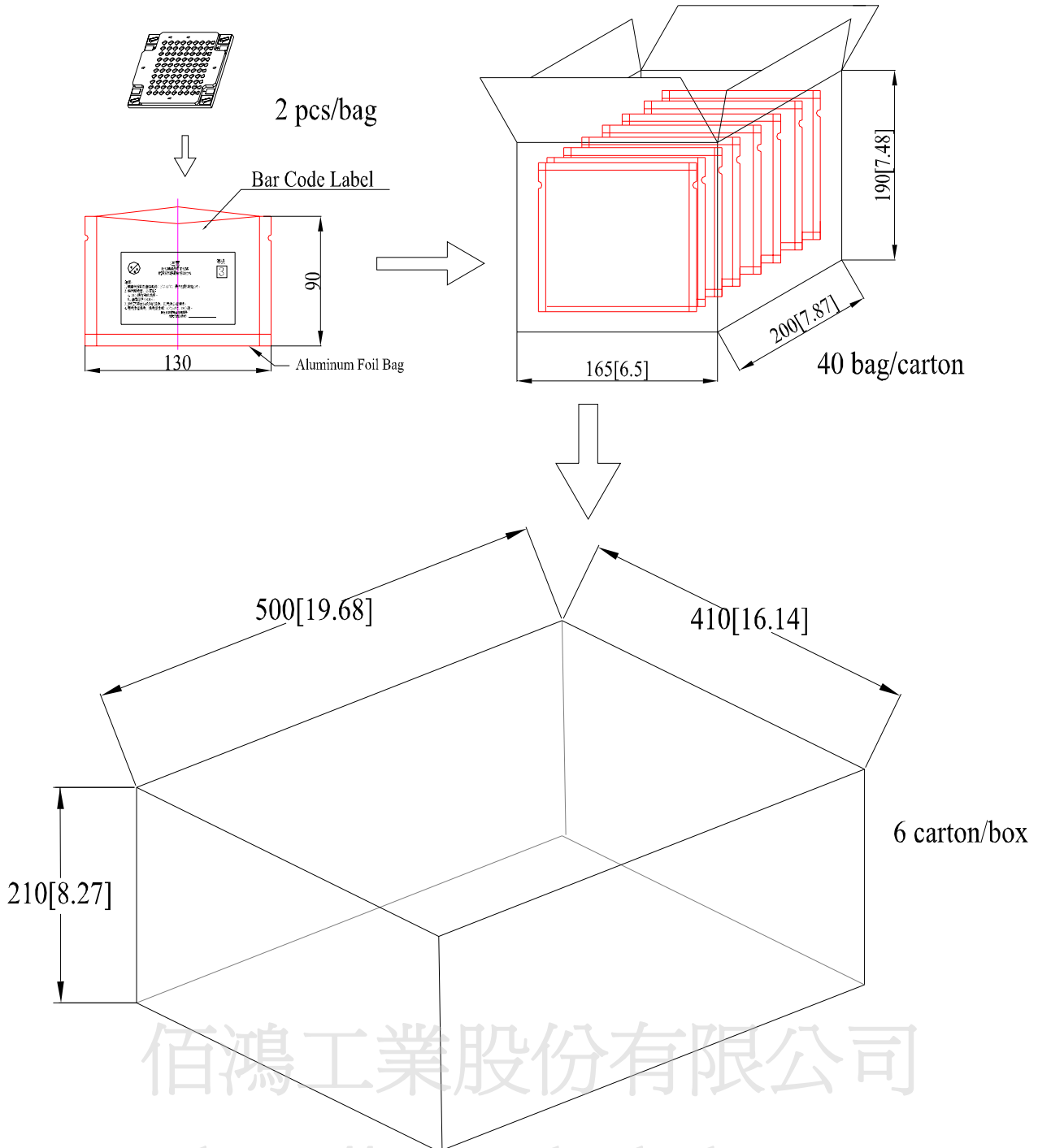
● Components Assembling Demonstration



Notes:

1. A Components bag is included : R Terminal with 20cm red wire×1、R Terminal with 20cm black wire×1、Insulating WashersX4、M3 ScrewsX4.

● Packing:



Notes:

1. Dimension : mm [in].
2. Tolerance : ±10mm

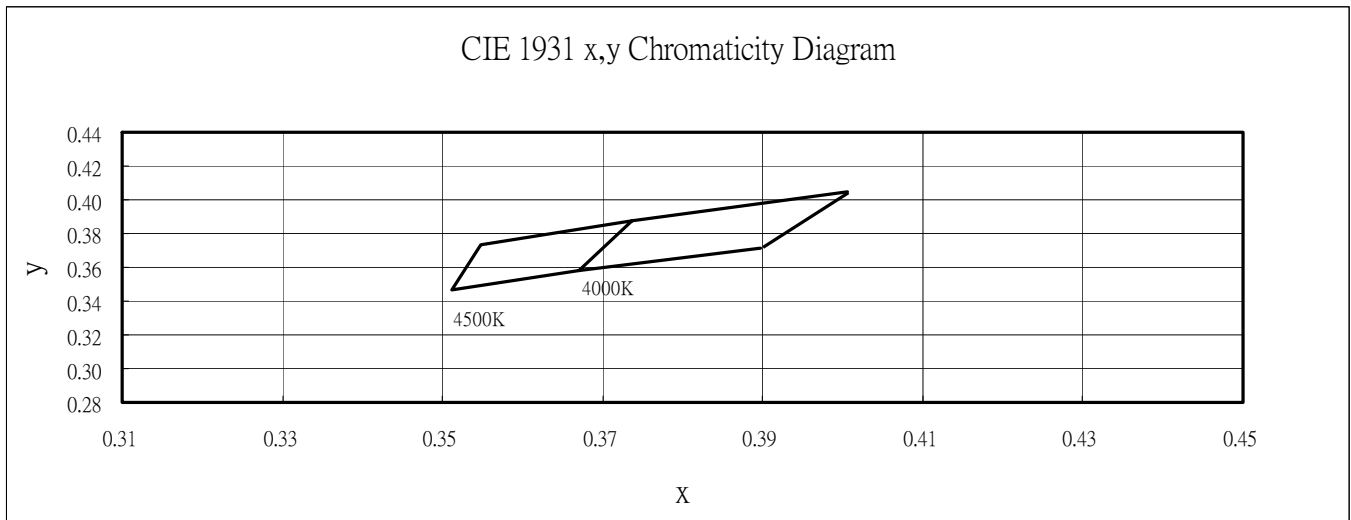
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● Total Flux Bin Limits (at $I_F = 160\text{mA}$)

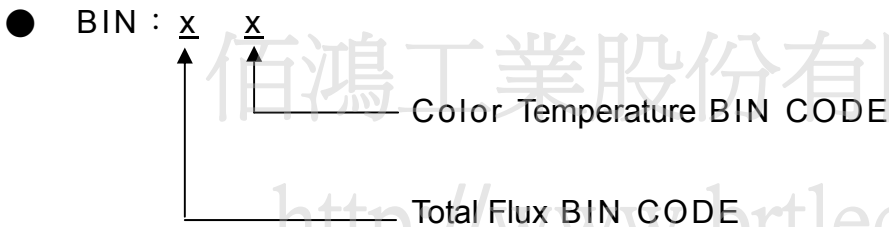
BIN CODE	Min. (lm)	Max. (lm)
U	300	346
V	346	449
W	449	584

Tolerance for each Bin limit is $\pm 15\%$

● Color Temperature Bin Limits (at $I_F = 160\text{mA}$)



BIN CODE	Nominal CCT	CCT Range	Chromaticity Coordinates				
			x	y	x	y	
K40	4000K	3710-4260	x	0.3818	0.4006	0.3736	0.3670
			y	0.3797	0.4044	0.3874	0.3578
K45	4500K	4260-4745	x	0.3611	0.3736	0.3548	0.3512
			y	0.3658	0.3874	0.3736	0.3465



Notes:

- Bin categories are established for classification of products.
Products may not be available in all bin categories.