

DATA SHEET

● DEVICE NUMBER : BWL-10C3A10-S

SHEET DATE	1	2	3	4	5	6	7	8			CONTENTS
2010.06.01	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-			Preliminary
2010.08.27	1.1	1.1	1.1	1.1	1.1	1.1	1.1	-			Modified storage and welding conditions. Amendments to the content Welding.
2010.12.07	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2			Add bin

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BRIGHT LED ELECTRONICS CORP.

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APPROVED	DRAWER
 羅 豐 2010.12.07	 劉 秋 曉 2010.12.07

● Features:

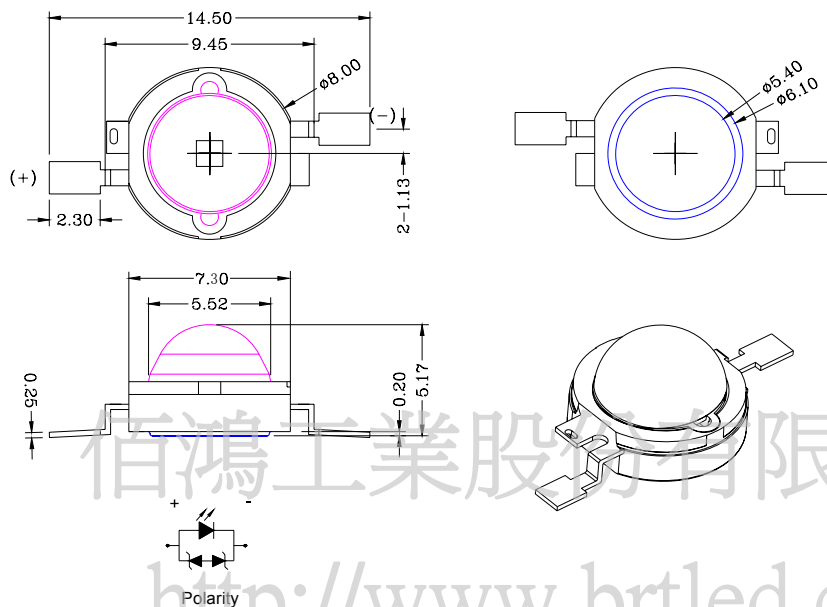
1. Input power: 3W.
 2. Chip material: InGaN.
 3. Emitted color: White.
 4. High lumen output.
 5. High flux density.
 6. Low power consumption.
 7. Efficient heat transfer.
 8. Exterior lens is silicone.
 9. Add extra heat sink is necessary.
- * Must increasing heatsink, let the unit temperature below 60 °C.



● Applications:

1. Torch.
2. Head Light.
3. Architectural Lighting.
4. LCD Backlight.

● Package dimensions :



Notes:

1. All dimensions are in millimeters.
2. Tolerance is $\pm 0.5\text{mm}$ unless otherwise specified.

● Absolute maximum ratings ($T_J=25^{\circ}\text{C}$)

Parameter	Symbol	Rating	Unit
Power Dissipation	P_D	3.0	W
DC Forward Current ^{*1}	I_F	700	mA
Peak Pulsed Forward Current ^{*2}	I_{FP}	2.0	A
LED Junction Temperature	T_J	130	$^{\circ}\text{C}$
Operating Temperature	T_{opr}	-40~ +85	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40~ +100	$^{\circ}\text{C}$
Reverse Voltage	V_R	5	V
Manual Soldering (T=5 sec)	T_{sol}	300 ± 5	$^{\circ}\text{C}$

^{*1}Proper current derating must be followed to keep LED junction temperature (T_J) below the maximum.

^{*2}Condition for I_{FP} is pulsed with 1/10 duty and 0.1msec width.

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F = 700\text{mA}$	-	3.9	4.5	V
Total Flux	Φ_v	$I_F = 700\text{mA}$	150	155	-	lm
Color Temperature	CCT	$I_F = 700\text{mA}$	4745	-	7040	K
Color Rendering Index	CRI	$I_F = 700\text{mA}$	65	70	-	
Reverse Current	I_R	$V_R = 5\text{V}$	-	-	10	μA
Thermal Resistance, Junction To Case	$R_{\theta_{JC}}$	$I_F = 700\text{mA}$	-	9	-	$^{\circ}\text{C}/\text{W}$
Viewing Angle	$2\theta_{1/2}$	$I_F = 700\text{mA}$	-	120	-	degree

● Typical electro-optical characteristics curves

Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

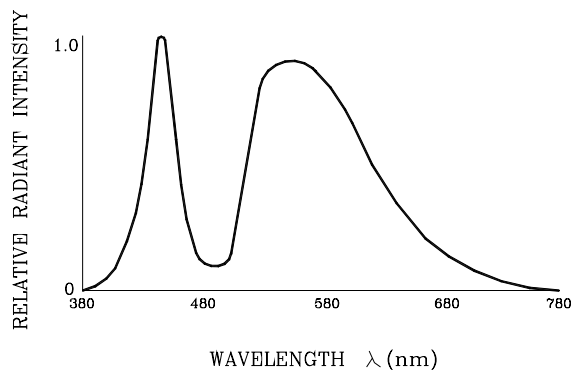


Fig.2 FORWARD CURRENT VS. AMBIENT TEMPERATURE

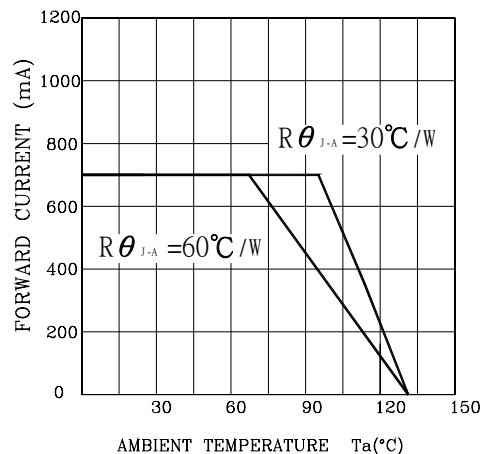


Fig.3 FORWARD CURRENT VS. FORWARD VOLTAGE

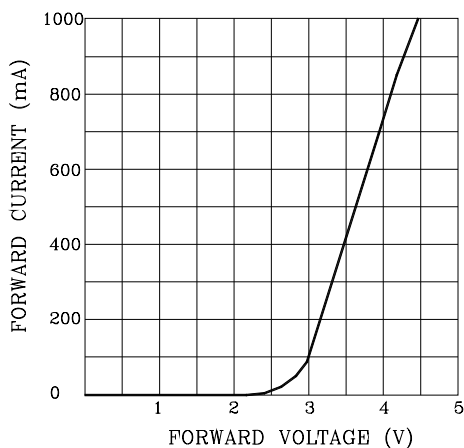


Fig.4 RELATIVE LUMINOUS INTENSITY VS. JUNCTION TEMPERATURE

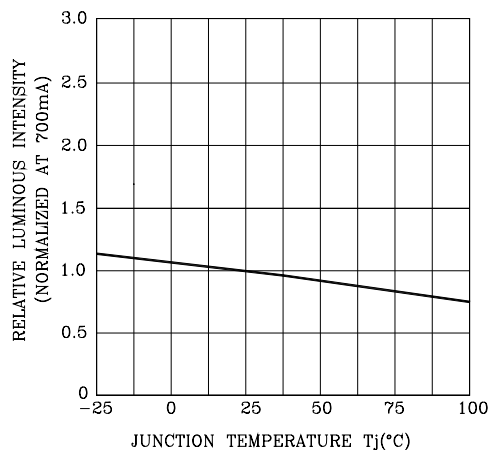


Fig.5 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

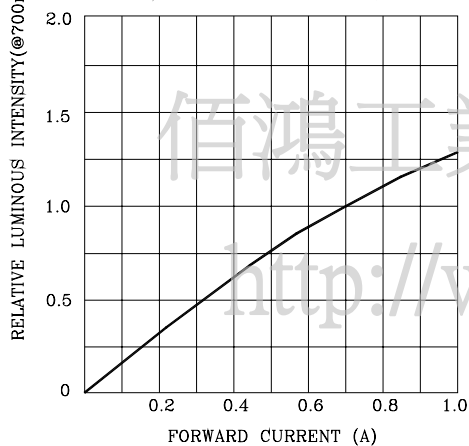
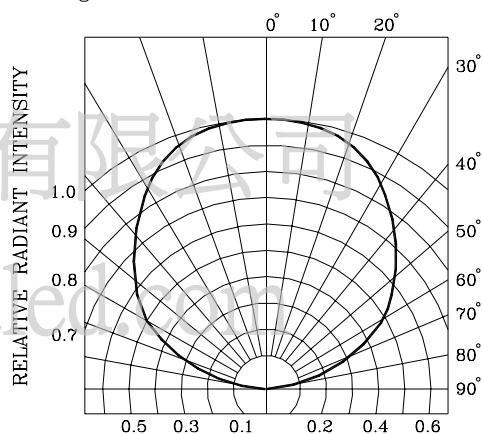


Fig.6 RADIATION DIAGRAM

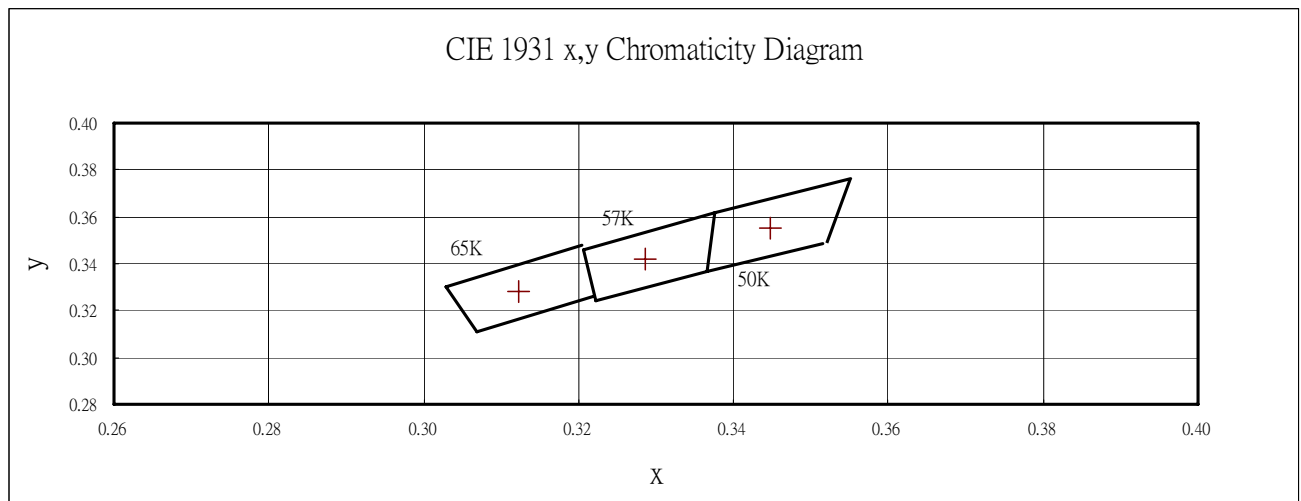


● Total Flux Bin Limits (At 700mA)

BIN CODE	Min. (lm)	Max. (lm)
R	150	157
S	157	205

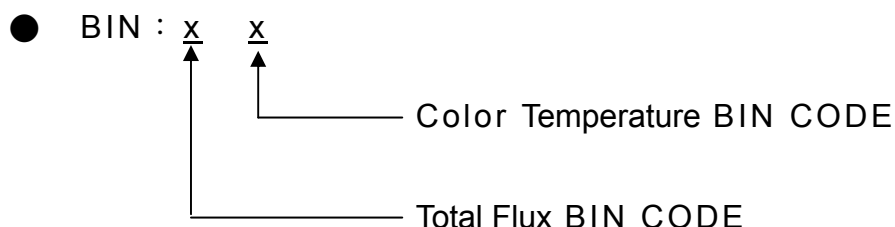
Tolerance for each Bin limit is $\pm 15\%$

● Color Temperature Bin Limits(At 700mA)



BIN CODE	Nominal CCT	CCT Range	Chromaticity Coordinates			
K50-1	5000K	4745-4845	x	0.3551	0.3376	0.3366
			y	0.3760	0.3616	0.3369
K50-2	5000K	4845-4945	x	0.3551	0.3376	0.3366
			y	0.3760	0.3616	0.3369
K50-3	5000K	4945-5045	x	0.3551	0.3376	0.3366
			y	0.3760	0.3616	0.3369
K50-4	5000K	5045-5145	x	0.3551	0.3376	0.3366
			y	0.3760	0.3616	0.3369
K50-5	5000K	5145-5245	x	0.3551	0.3376	0.3366
			y	0.3760	0.3616	0.3369
K50-6	5000K	5245-5310	x	0.3551	0.3376	0.3366
			y	0.3760	0.3616	0.3369
K57-1	5700K	5310-5410	x	0.3376	0.3207	0.3222
			y	0.3616	0.3462	0.3243
K57-2	5700K	5410-5510	x	0.3376	0.3207	0.3222
			y	0.3616	0.3462	0.3243

K57-3	5700K	5510-5610	x	0.3376	0.3207	0.3222	0.3366
			y	0.3616	0.3462	0.3243	0.3369
K57-4	5700K	5610-5710	x	0.3376	0.3207	0.3222	0.3366
			y	0.3616	0.3462	0.3243	0.3369
K57-5	5700K	5710-5810	x	0.3376	0.3207	0.3222	0.3366
			y	0.3616	0.3462	0.3243	0.3369
K57-6	5700K	5810-5910	x	0.3376	0.3207	0.3222	0.3366
			y	0.3616	0.3462	0.3243	0.3369
K57-7	5700K	5910-6020	x	0.3376	0.3207	0.3222	0.3366
			y	0.3616	0.3462	0.3243	0.3369
K65-1	6500K	6020-6220	x	0.3205	0.3028	0.3068	0.3221
			y	0.3481	0.3304	0.3113	0.3261
K65-2	6500K	6220-6420	x	0.3205	0.3028	0.3068	0.3221
			y	0.3481	0.3304	0.3113	0.3261
K65-3	6500K	6420-6620	x	0.3205	0.3028	0.3068	0.3221
			y	0.3481	0.3304	0.3113	0.3261
K65-4	6500K	6620-6820	x	0.3205	0.3028	0.3068	0.3221
			y	0.3481	0.3304	0.3113	0.3261
K65-5	6500K	6820-7040	x	0.3205	0.3028	0.3068	0.3221
			y	0.3481	0.3304	0.3113	0.3261



Notes:

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

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● Soldering :

1. Manual Soldering

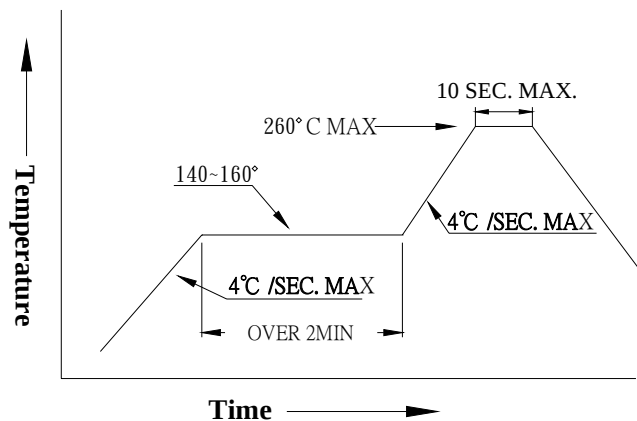
The temperature of the iron tip should not be higher than 300°C and Soldering time to be within 3 seconds per solder-pad.

2. Reflow Soldering

Preheating : 140°C ~ 160°C ± 5°C, within 2 minutes.

Operation heating : 260°C (Max.) within 10 seconds. (Max)

Gradual Cooling (Avoid quenching).



● Handling :

Care must be taken not to damage LED's silicone while exposing to high temperature or contact LED's silicone with hard or sharp objects, such as metal hook, tweezer or sand blasting.

● Notes for designing:

Current limiting resistor or a constant current power supply must be used in the circuit to drive BRIGHT LEDs within the rated figures and not to overload BRIGHT LEDs with instantaneous voltage at the turning ON and OFF cycles.

When using pulse driving, the average current must be within the rated figures. And the circuit should be designed to avoid reverse voltage when turning off the BRIGHT LEDs.

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● Storage:

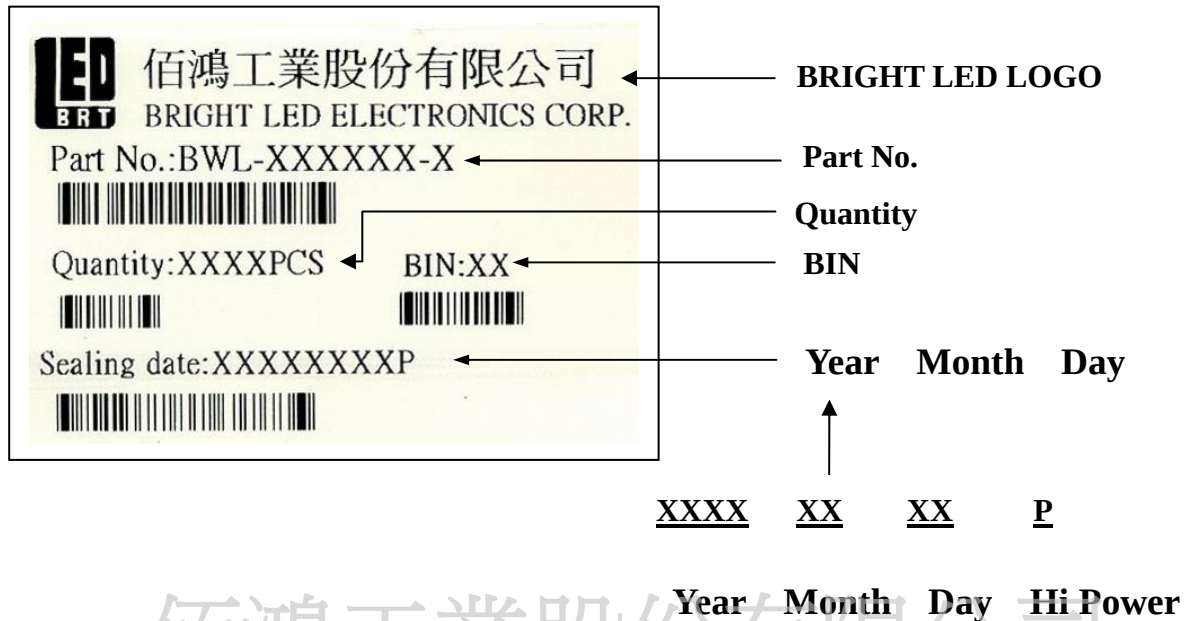
In order to avoid the absorption of moisture, it is recommended to solder BRIGHT LEDs as soon as possible after unpacking the sealed envelope.

If the envelope is still packed, to store it in the environment as following:

- (1) Temperature : 5°C-30°C (41°F) Humidity : RH 60% Max.
- (2) After this bag is opened, devices that will be applied to infrared reflow, vapor-phase reflow, or equivalent soldering process must be:
 - a. Completed within 168 hours.
 - b. Stored at less than 30% RH.
- (3) Devices require baking before mounting, if:
 - (2) a or (2) b is not met.
- (4) If baking is required, devices must be baked under below conditions:
 - 48 hours at 60°C±3°C.

● Package and Label of Products:

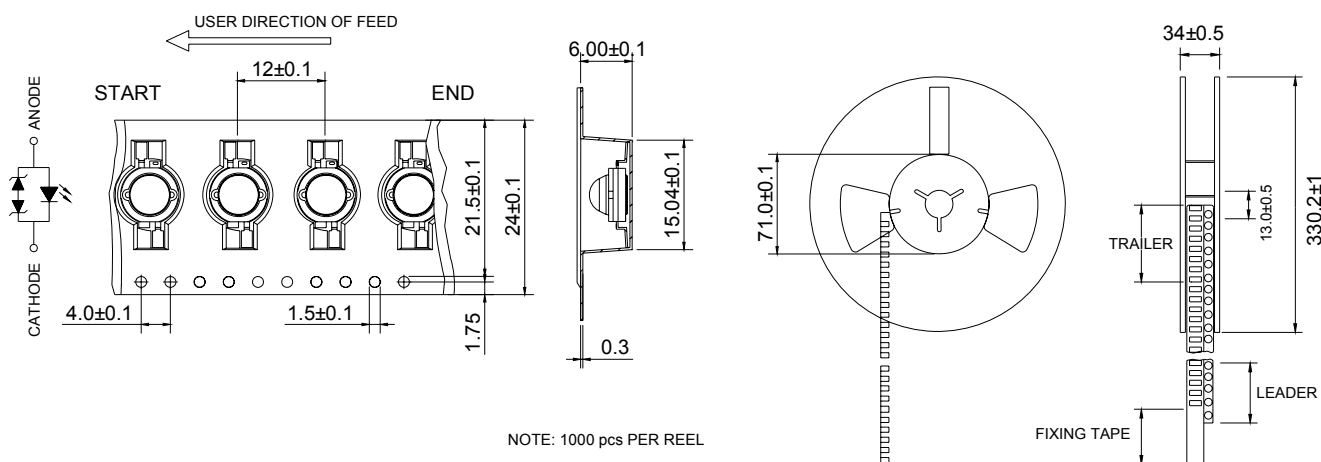
- (1) Package: Products are packed in one bag of 1000 pcs (one taping reel) and a label is attached to each bag.
- (2) Label:



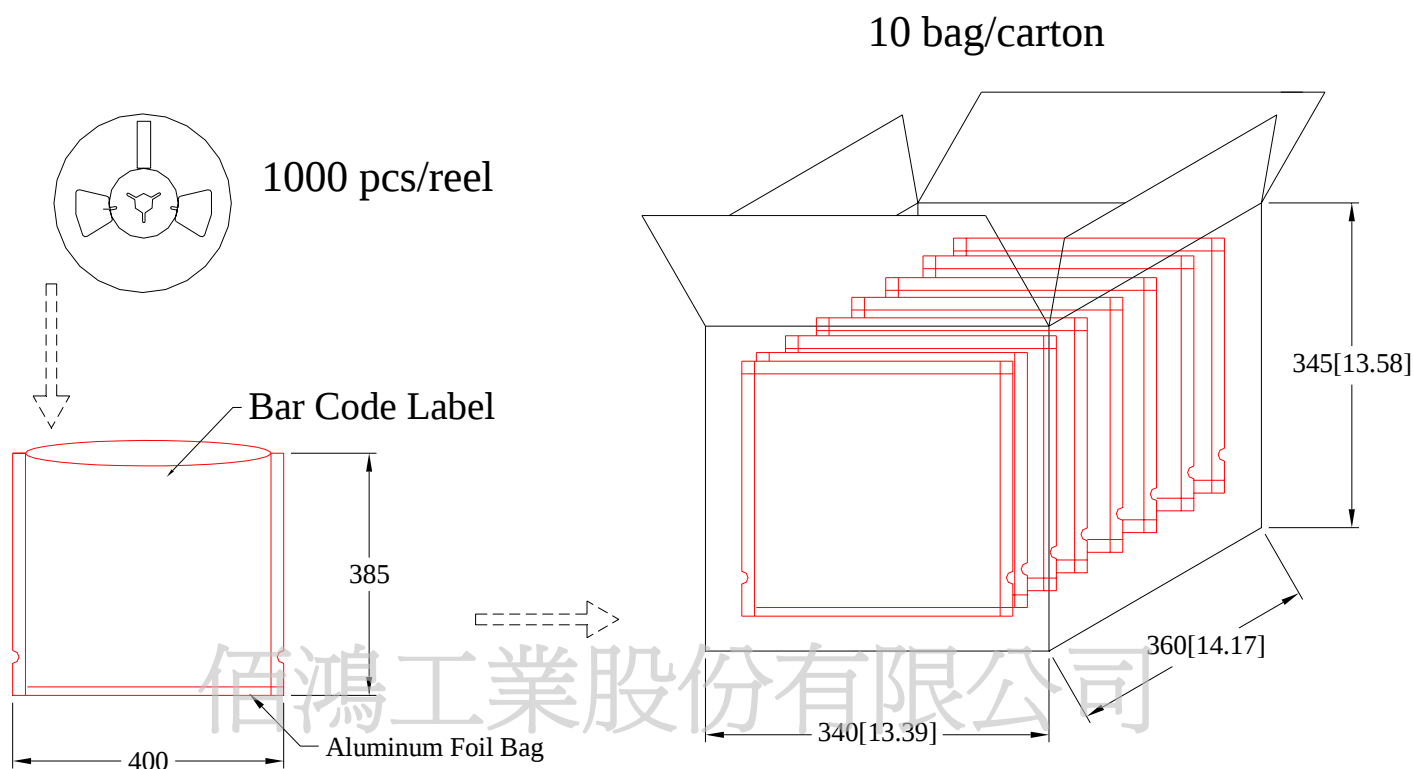
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● Tapping and packaging specifications(Units: mm)



● Package Method : (unit:mm)



NOTES : Bag : Tolerance is ± 5 mm unless otherwise noted.

Carton : Tolerance is ± 10 mm unless otherwise noted.