Surface Mounted Chip LED　　Model No.：CL-SP155UHRDNB

■Features：

●Compatible with automatic placement equipment

●Compatible with reflow solder process

■Applications：

●Automotive_Telecommunication

●Indicators

●LCD Back-lights

●Illuminations

Absolute Maximum Ratings　（Ta=25℃）

Item	Symbol	Maximum	Unit
Peak Forward Current (1/10 Duty Cycle 0.1ms Pulse Width)	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Derating Linear From 25℃		0.4	mA/℃
Operating Temperature Range	Topr	-30 to +80	℃
Storage Temperature Range	Tstg	-40 to +85	℃

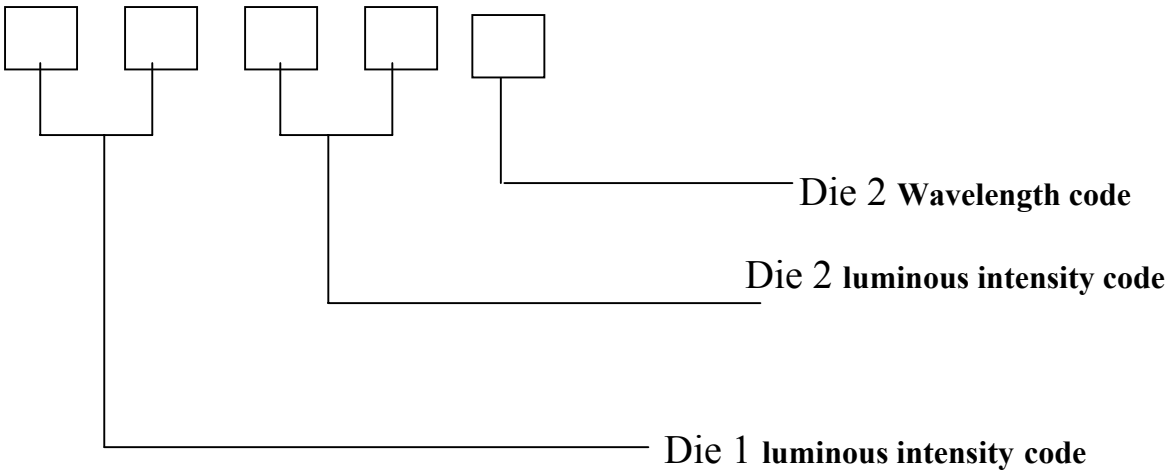
Electrical / Optical Characteristics　（Ta=25℃）

Chip			Lens Appearance	Absolute Maximun Rating			Electro-optical Data (At 20mA)				Viewing Angle 2θ 1/2 (deg)
Emitted Color	λP (nm)	λD (nm)		△λ (nm)	Pd (mW)	If (mA)	Vf(V)		Iv(mcd)		
							Typ.	Max.	Min.	Typ.	
Ultra High Red	645	631	Water Clear	15	78	30	2.1	2.6	72	115	130°
Blue	468	470		25	100	25	3.5	4.2	72	115	

ISSUE	DIMENSION NO：	VERSION：	DATE：
		A	2009/03/12
	APPROVAL：	CHECK：	EDIT：

◆ **Packing coding principle**

Notice: Bin code： luminous intensity / wavelength。



◆ **The Luminous Intensity Grade of Red Chip-LED Products**

● **Test Condition：@ 20mA**

Range,mcd	Bin code
72/90	K1
90/115	K2
115/145	L1
145/180	L2

◆ **Dominant Wavelength Grade of Red Chip-LED Products**

● I type **@ 20mA**

BIN	Range
	624/634

◆ **The Luminous Intensity Grade of Blue Chip-LED Products**

● **Test Condition：@ 20mA**

Range,mcd	Bin code
72/90	K1
90/115	K2
115/145	L1
145/180	L2

◆ **Dominant Wavelength Grade of Blue Chip-LED Products**

● I type **@ 20mA**

BIN	Range	BIN	Range
1	465/468	2	468/471

◆ Descriptions：

- The Chip-LED Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
- Besides, lightweight makes them ideal for miniature application, etc.

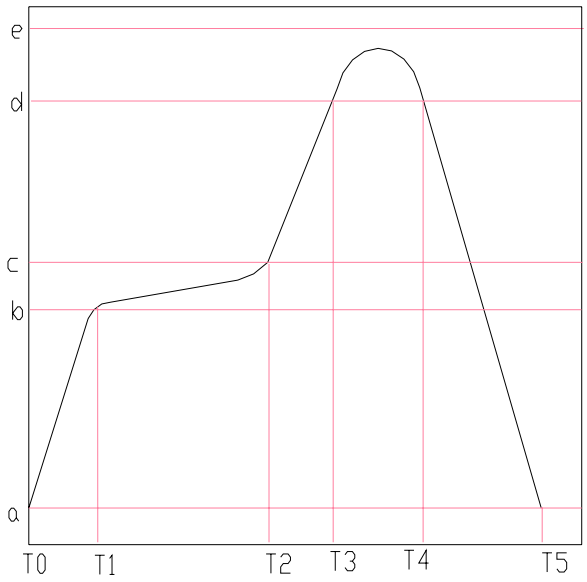
◆ Reliability Test Items And Conditions：

NO.	Item	Test Conditions	Test Hours / Cycle	Sample Q'ty	Ac / Re
1	Solder Heat	TEMP：260℃±5℃	5 sec	36 pcs	0 / 1
2	Temperature Cycle	H：+100℃ 30min. ∫ 5min. L：-40℃ 30min.	50 cycle	36 pcs	0 / 1
3	Thermal Shock	H：+100℃ 5min. ∫ 10sec L：-40℃ 5min.	50 cycle	36 pcs	0 / 1
4	High Temperature Storage	TEMP：100℃	1000 hrs	36 pcs	0 / 1
5	Low Temperature Storage	TEMP：-40℃	1000 hrs	36 pcs	0 / 1
6	DC Operating Life	I_F＝20mA	1000 hrs	36 pcs	0 / 1
7	High Temperature / High Humidity	85℃ / 90～95%R.H.	1000 hrs	36 pcs	0 / 1

◆ Reflow Temp. / Time：：

Please refer to the following figure：

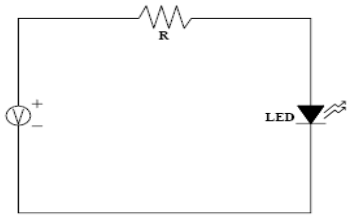
Temp.(℃)		Time(Sec)	
a	25	T0~T1	Max. 3℃/sec
b	150	T1~T2	90~130 sec
c	200	T2~T3	Max. 3℃/sec
d	220	T3~T4	Max. 30~50 sec
e	250		
		T4~T5	Max. -3℃/sec
Blet Speed		70~90 cm/min	



◆ **Precautions For Use：**

- Over－current－proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change （Burn out will happen）



- Storage

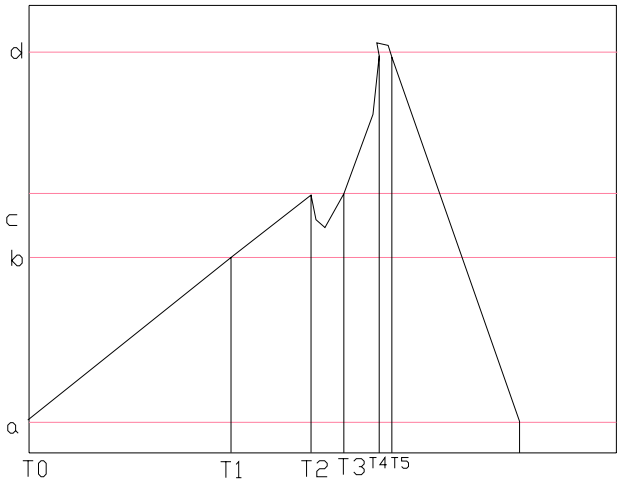
1. The operation of temperature and R.H. are：5℃～30℃, R.H.60％ Max..
2. Once the package is opened, the products should be used within 72 hrs. Otherwise, they should be kept in a dampproof box with desiccating regent. Considering the tape life, we suggest our customers to use our products within 1 year（from production date）.
3. It's recommended to bake before soldering when the package is unsealed after 72 hrs. The condition is : 80℃±5℃ for 24hrs.

◆ **Soldering Iron：**

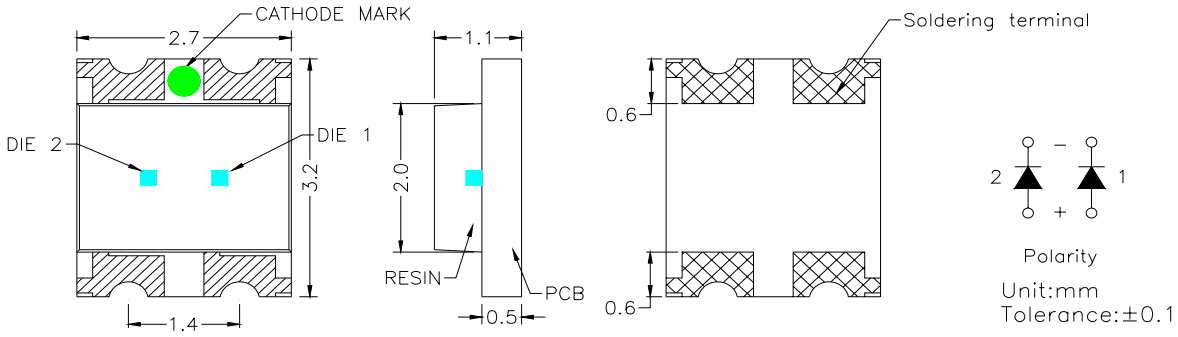
- Temperature at tip of iron：300℃ Max.（25W Max.）
- Soldering time：5 ±1sec.

◆ **Wave Soldering Temp. / Time：**

Temp.(℃)		Time(Sec)	
a	25	T1~T2	60±20
b	130±10	T2~T3	
c	185	T3~T6	
d	250±3	T4~T5	3±2

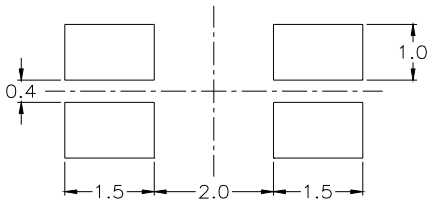


◆ Package Dimensions of Device



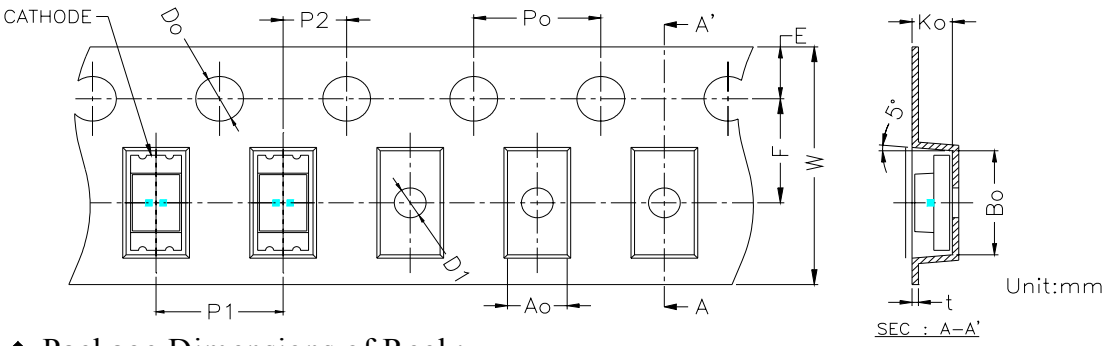
1. Soldering terminal may shift in x, y direction.
2. Polarity referring onto the cathode mark is reversed on the URUR/HRHR/SRSR

◆ Recommended Soldering Pad Dimensions

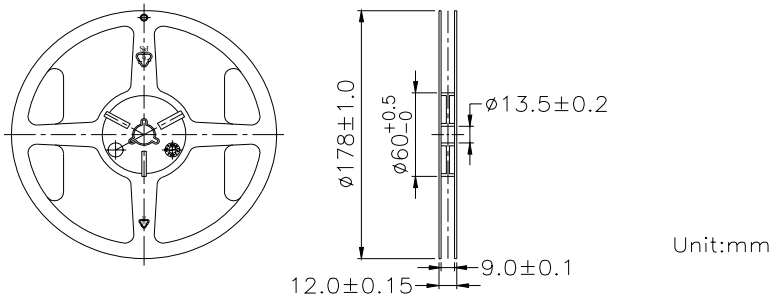


◆ Tape Specification : 3000pcs Per Reel

Packing Size													
Item	W	P1	E	F	Do	D1	Po	10Po	P2	Ao	Bo	Ko	t
Spec.	8.00	4.00	1.75	3.50	1.50	1.00	4.00	40.00	2.00	2.80	3.35	1.35	0.22
Tolerance	±0.20	±0.10	±0.10	±0.05	$^{+0.10}_{-0.00}$	±0.05	±0.05	±0.20	±0.05	±0.10	±0.10	±0.10	±0.05



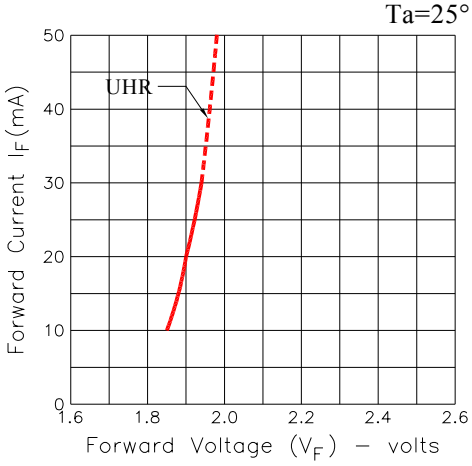
◆ Package Dimensions of Reel :



◆Typical Electro-Optical Characteristic Curves:

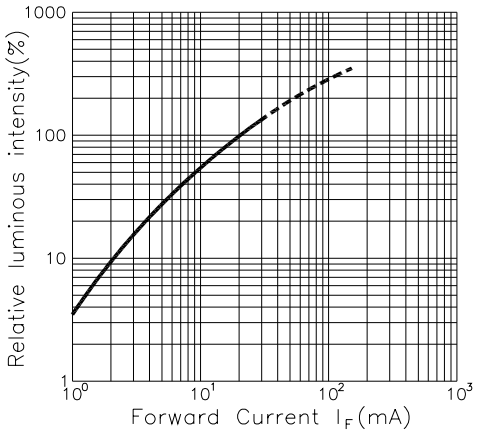
Forward Current Vs. Forward Voltage

Ta=25° C

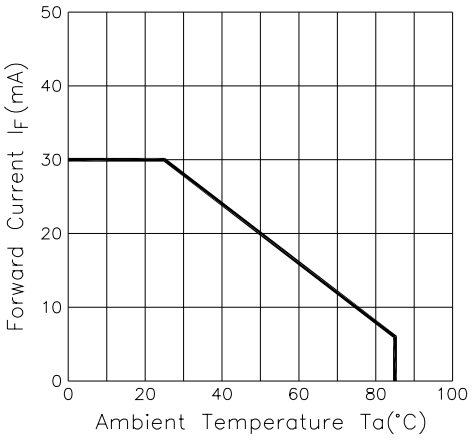


Luminous Intensity Vs. Forward Current

Ta=25° C

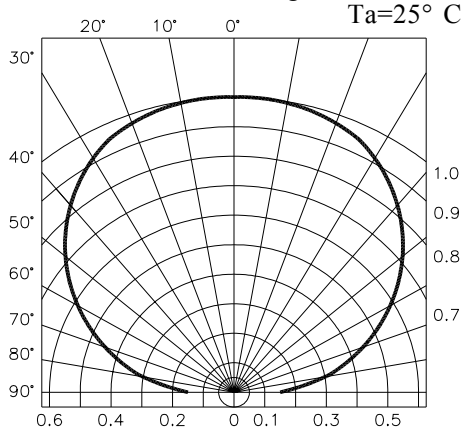


Forward Current Derating Curve

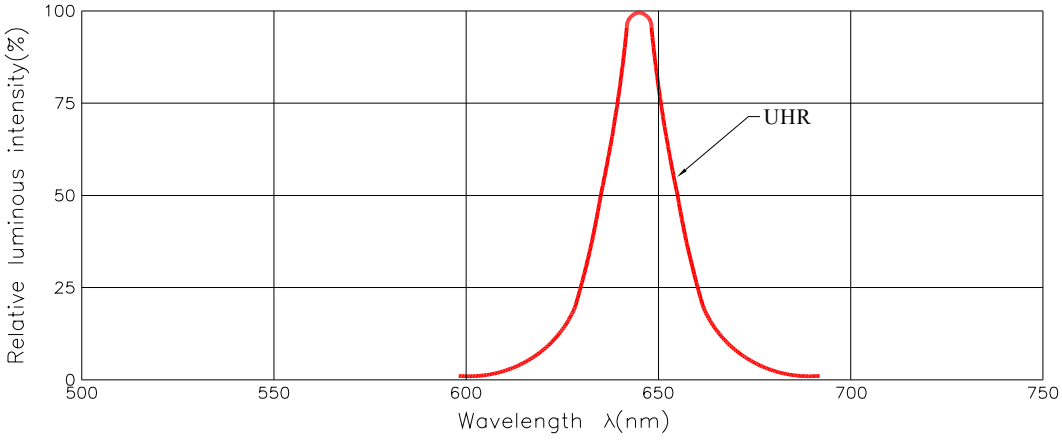


Radiation Diagram

Ta=25° C



Spectrum Distribution



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Forward Current Vs. Forward Voltage

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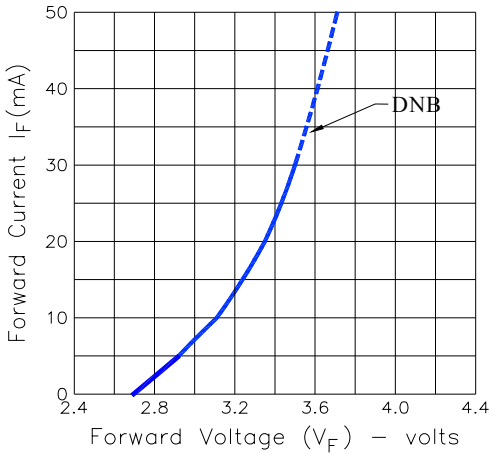
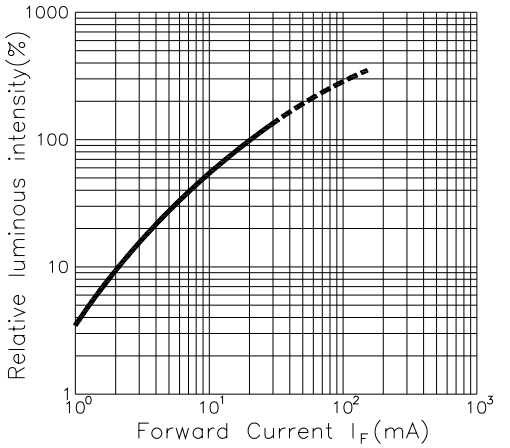
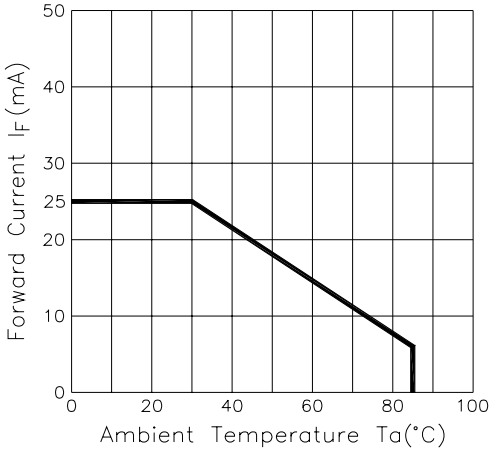


Luminous Intensity Vs. Forward Current

Ta=25°C



Forward Current Derating Curve



Radiation Diagram

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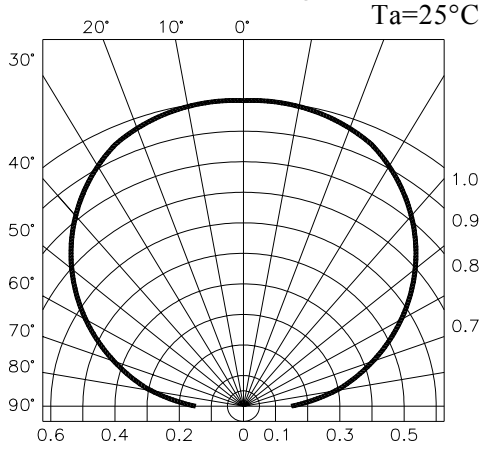
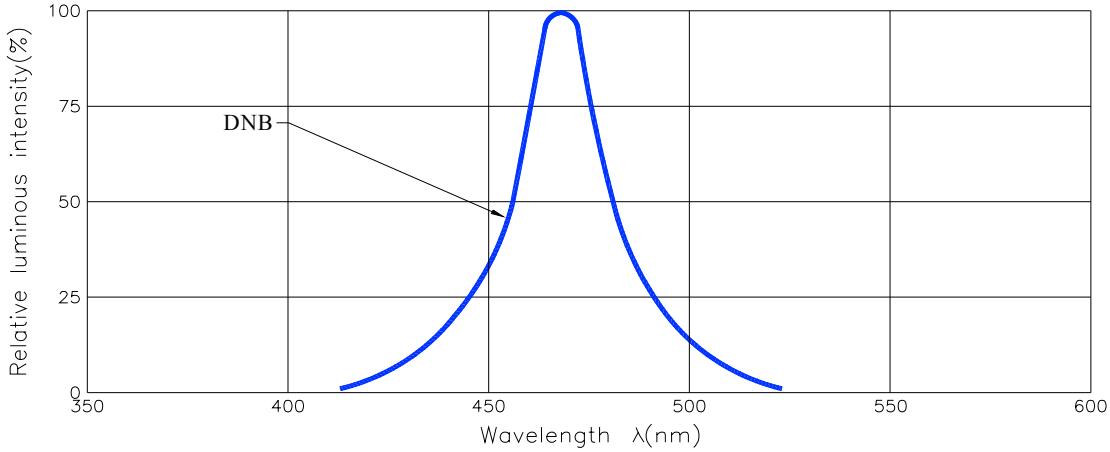
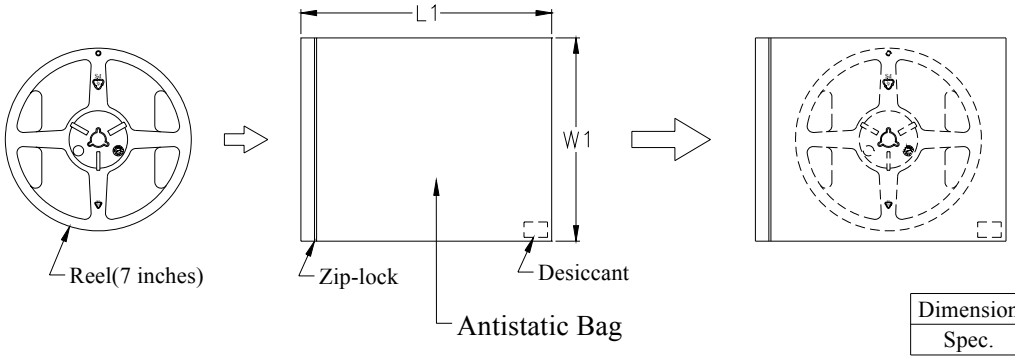


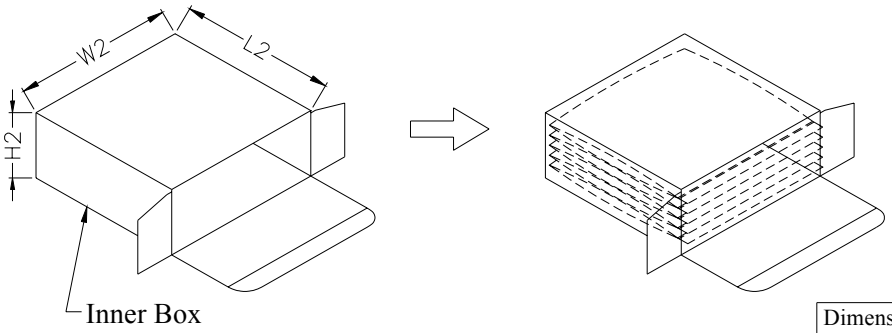
Spectrum Distribution





Dimension	L1	W1
Spec.	203.0	198.0

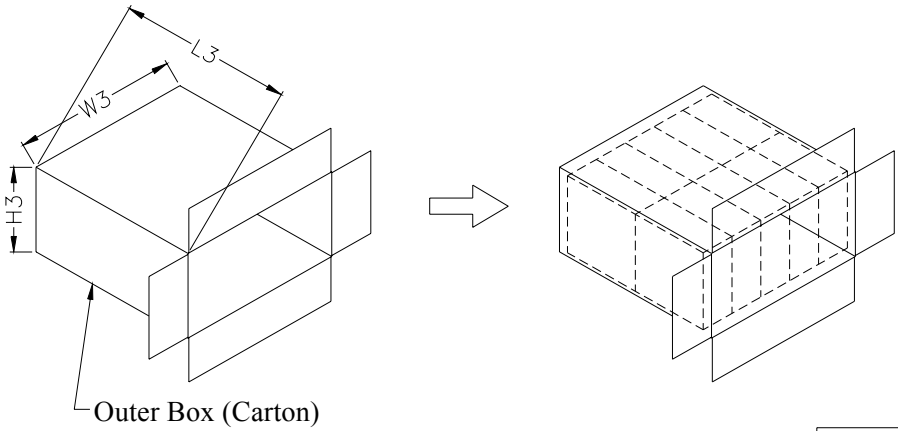
Unit : mm



5 Reels per Box

Dimension	L2	W2	H2
Outside	200.0	205.0	85.0
Inside	193.7	198.7	78.7

Unit : mm



10 Boxes per Carton

Dimension	L3	W3	H3
Outside	448.0	424.0	220.0
Inside	433.4	409.4	205.4

Unit : mm