

PRELIMINARY SPEC

Part Number: WP1504CB/RWC/Z

WHITE



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Features

- LOW POWER CONSUMPTION.
- VERSATILE MOUNTING ON P.C. BOARD OR PANEL.
- T-1 3/4 DIAMETER FLANGELESS PACKAGE.
- RELIABLE AND RUGGED.
- UL RATING : 94V-0.
- HOUSING MATERIAL: TYPE 66 NYLON.
- MOISTURE SENSITIVITY LEVEL : LEVEL 1.
- ELECTROSTATIC DISCHARGE THRESHOLD (HBM):1000V.
- TYP. COLOR TEMPERATURE:6500K.
- COLOR COORDINATES:X=0.31,Y=0.31 ACC. TO CIE1931(WHITE).
- OPTICAL EFFICIENCY: 32.8 lm/W(TYP.)
- COLOR REPRODUCTION INDEX:80.
- RoHS COMPLIANT.

Description

The source color devices are made with InGaN Light Emitting Diode.

Static electricity and surge damage the LEDs.

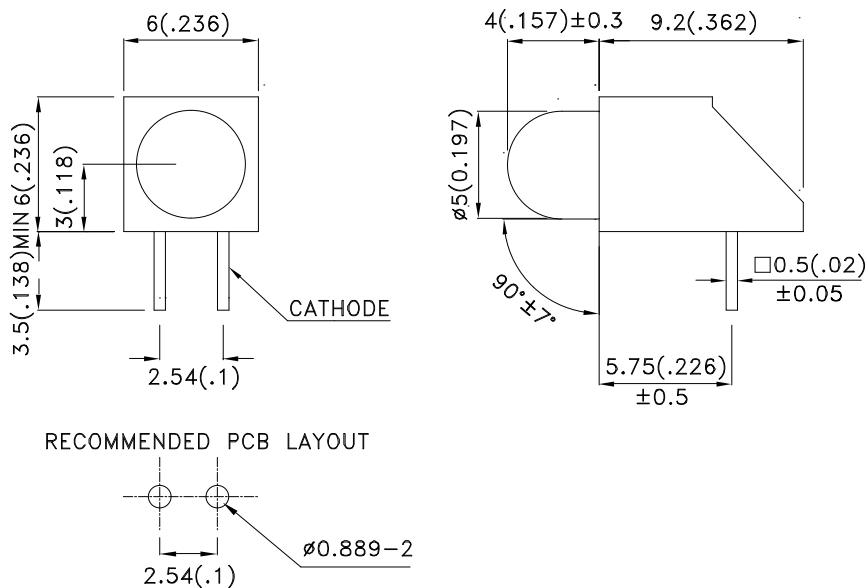
It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery must be electrically grounded.

Applications

- Furniture lighting
- Outdoor displays
- Optical indicators
- Signal and symbol luminaire
- Marker lights (e.g. steps, exit ways, etc.)
- Lighting for special effects (e.g. starry sky)
- Substitute for miniature flashlight

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25(0.01)$ unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change without notice.



Selection Guide

Part No.	Dice	Lens Type	Luminous Intensity ^{Note2} Iv(mcd) @ 20mA		Φ_v (mlm) ^{Note3} @ 20mA	Viewing Angle ^{Note1}
			Min.	Typ.	Typ.	2 θ 1/2
WP1504CB/RWC/Z	WHITE (InGaN)	WATER CLEAR	2800	7500	2100	20°

Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Value	Unit
Power dissipation	Pt	111	mW
Reverse Voltage	VR	5	V
Junction temperature	TJ	110	°C
Operating Temperature	Top	-40 To +85	°C
Storage Temperature	Tstg	-40 To +100	°C
DC Forward Current	IF	30	mA
Peak Forward Current ^{Note4}	IFM	100	mA
Thermal resistance Junction/ambient ^{Note5}	Rth JA	350	°C/W

Notes:

1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

2. Luminous intensity is measured by a current pulse of 10ms at a tolerance of $\pm 15\%$.

3. The typical data of Luminous Flux can only reflect statistical figures, actual parameters of individual product could differ from the typical data.

For the purpose of product enhancement, the typical data is subject to change without prior notice.

4. 1/10 Duty Cycle, 0.1ms Pulse Width.

5. Rth(J-A) Results from mounting on PC board FR4 (pad size $\geq 16 \text{ mm}^2$ per pad),

Electrical / Optical Characteristics at TA=25°C

Parameter	Symbol	Value	Unit
Chromaticity coordinate x acc.to CIE1931 IF=20mA [Typ.]	X ^{Note1}	0.31	-
Chromaticity coordinate y acc.to CIE1931 IF=20mA [Typ.]	Y ^{Note1}	0.31	-
Forward Voltage IF=20mA [Min.]	VF ^{Note2}	2.7	V
Forward Voltage IF=20mA [Typ.]		3.2	
Forward Voltage IF=20mA [Max.]		3.7	
Reverse Current (VR=5V) [Typ.]	IR	0.01	μA
Reverse Current (VR=5V) [Max.]		10	
Temperature coefficient of x IF=20mA, $-10^\circ\text{C} \leq T \leq 100^\circ\text{C}$ [Typ.]	TCx	-0.1	$10^{-3}/^\circ\text{C}$
Temperature coefficient of y IF=20mA, $-10^\circ\text{C} \leq T \leq 100^\circ\text{C}$ [Typ.]	TCy	-0.2	$10^{-3}/^\circ\text{C}$
Temperature coefficient of VF IF=20mA, $-10^\circ\text{C} \leq T \leq 100^\circ\text{C}$ [Typ.]	TCv	-2.5	mV/°C

Notes:

1. Chromaticity coordinates are measured by a current pulse of 20ms with a tolerance of ± 0.02 in X and Y color coordinates.

2. Forward voltage is measured with a current pulse of 10ms at a tolerance of $\pm 0.1\text{V}$.

Brightness codes

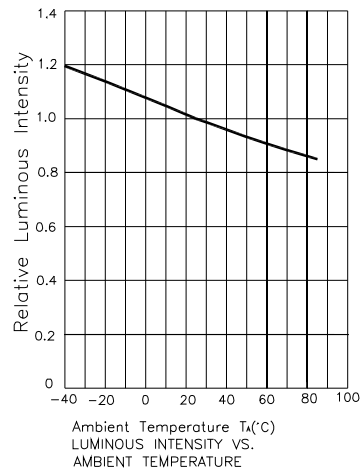
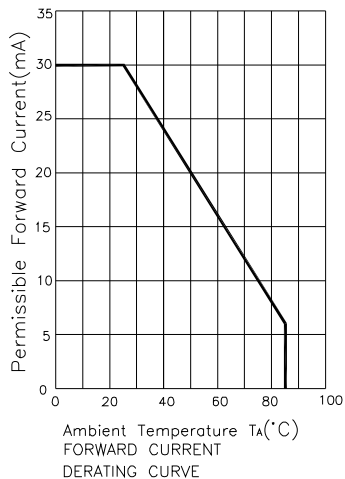
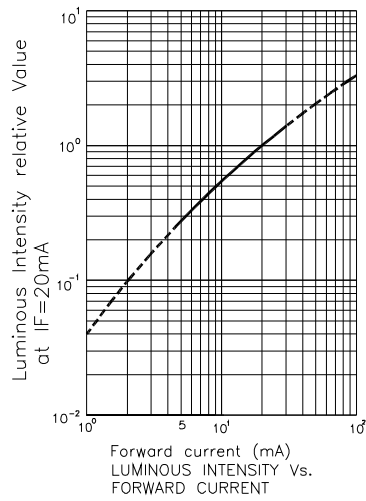
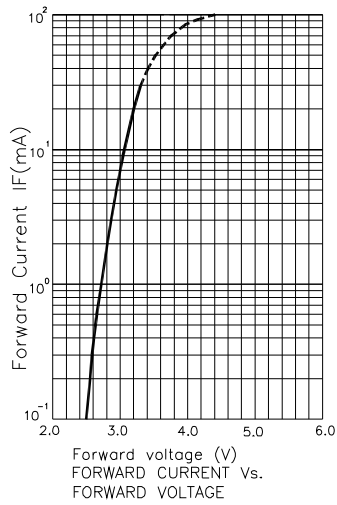
Code.	luminous Intensity ^{Note1} Iv(mcd) @ 20mA		Φ_v (mlm) ^{Note2} @ 20mA
	Min.	Max.	Typ.
ZA	2800	3800	900
ZB	3300	4500	1100
ZC	3800	5500	1300
ZD	4700	6500	1600
ZE	5700	7500	1900
ZF	6700	8500	2200
ZG	7500	10000	2500
ZH	8000	12000	2800
ZM	10000	16000	3200
ZN	12000	20000	3700
ZP	16000	24000	4300

Notes:

1. Luminous intensity is measured by a current pulse of 10ms at a tolerance of $\pm 15\%$.
2. The typical data of Luminous Flux can only reflect statistical figures, actual parameters of individual product could differ from the typical data. For the purpose of product enhancement, the typical data is subject to change without prior notice.

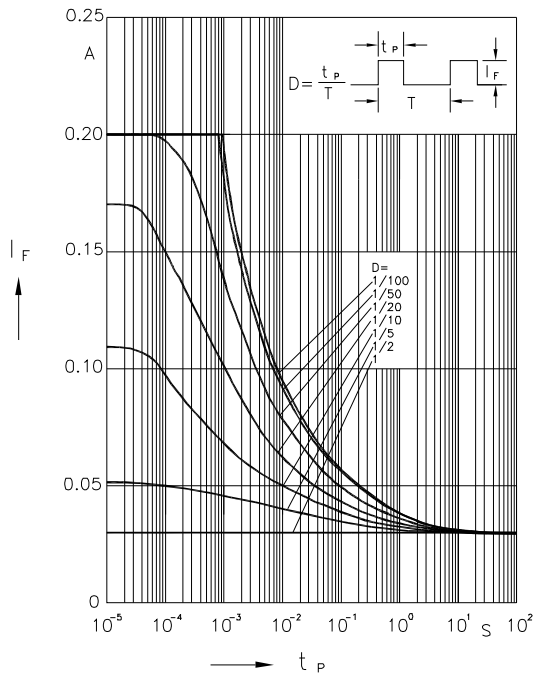
White

WP1504CB/RWC/Z

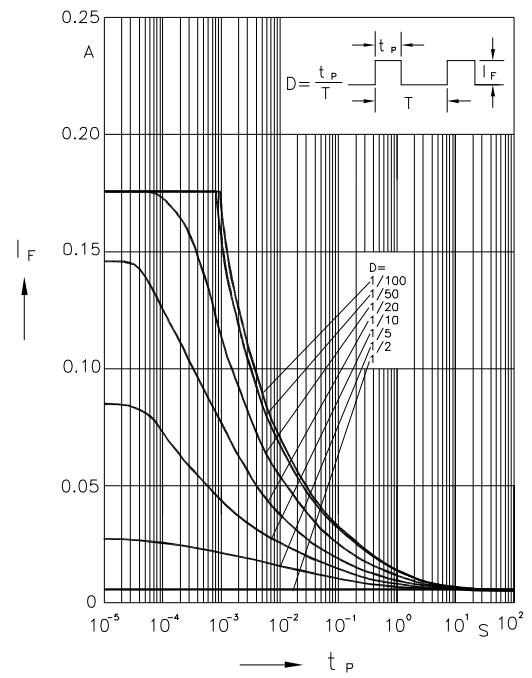


White

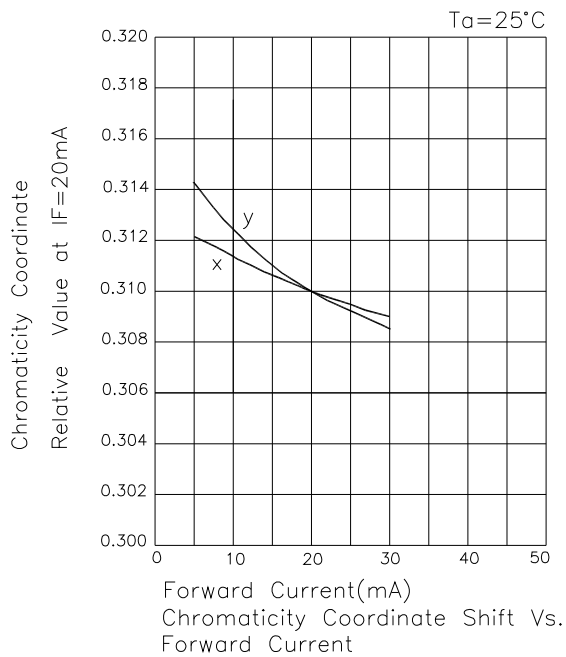
WP1504CB/RWC/Z



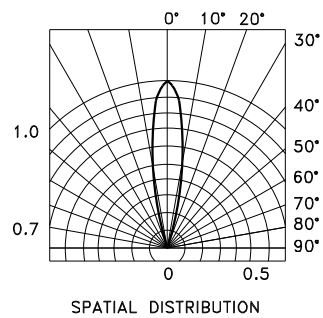
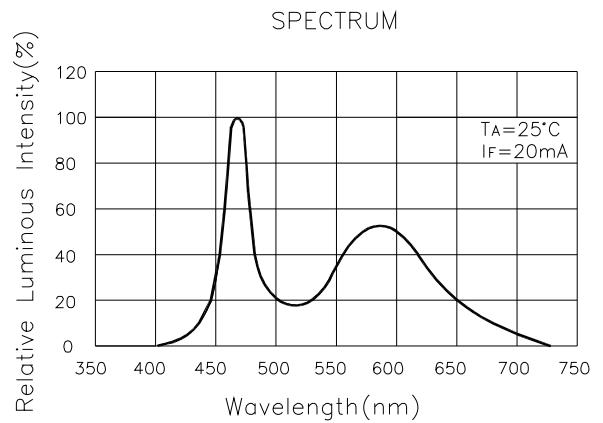
Permissible Pulse Handling Capability
Duty cycle $D = \text{parameter}$, $T_A = 25^\circ\text{C}$



Permissible Pulse Handling Capability
Duty cycle $D = \text{parameter}$, $T_A = 85^\circ\text{C}$

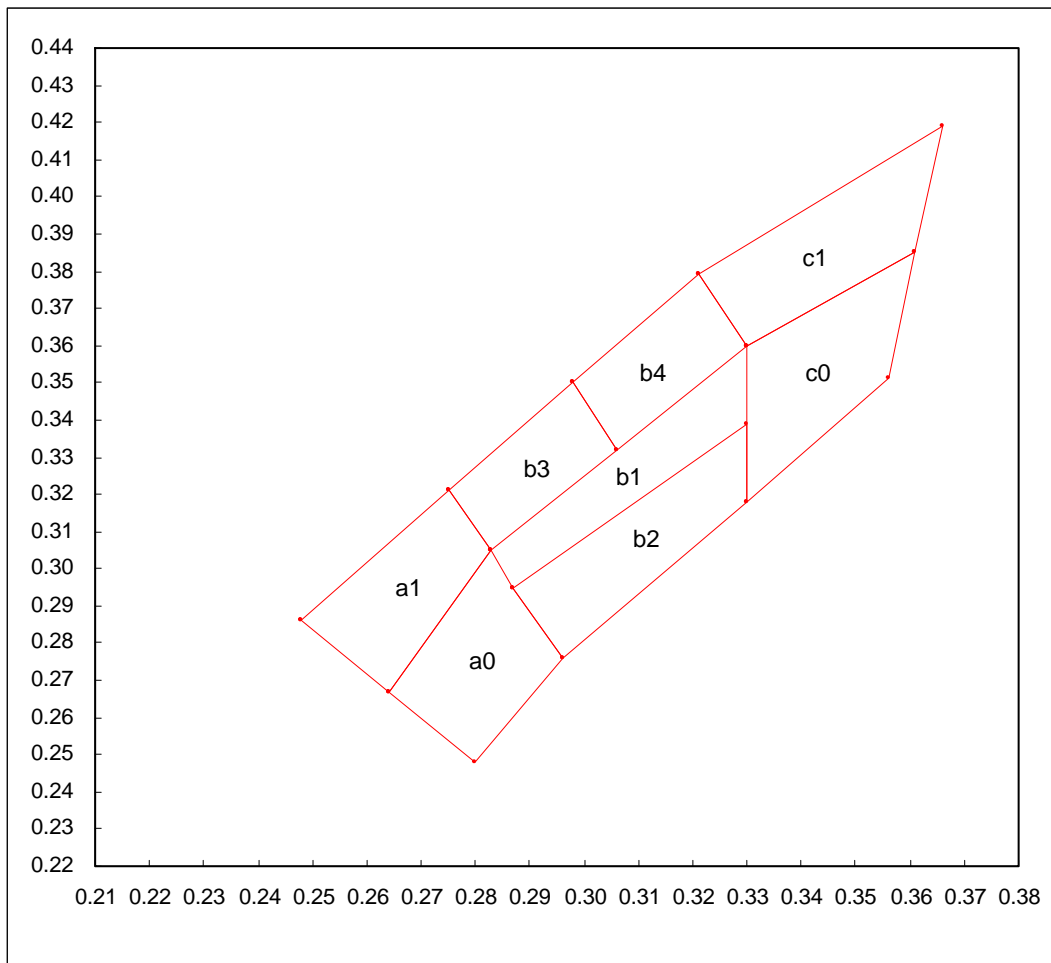


Forward Current (mA)
Chromaticity Coordinate Shift Vs. Forward Current



WP1504CB/RWC/Z

White CIE



a0				
X	0.264	0.283	0.296	0.280
Y	0.267	0.305	0.276	0.248
Reference CCT: 14000~9000k				

a1				
X	0.248	0.275	0.283	0.264
Y	0.286	0.321	0.305	0.267
Reference CCT: 14000~9000k				

b1				
X	0.283	0.330	0.330	0.287
Y	0.305	0.360	0.339	0.295
Reference CCT: 9000~5600k				

b2				
X	0.287	0.330	0.330	0.296
Y	0.295	0.339	0.318	0.276
Reference CCT: 9000~5600k				

b3				
X	0.275	0.298	0.306	0.283
Y	0.321	0.350	0.332	0.305
Reference CCT: 9000~7000k				

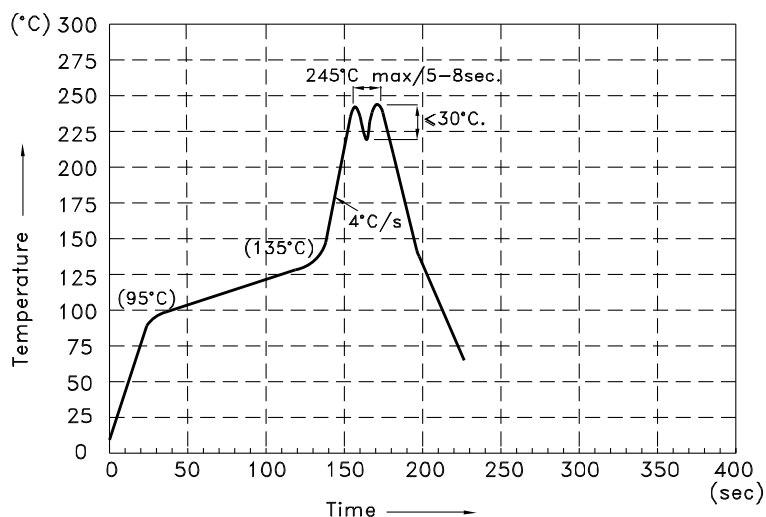
b4				
X	0.298	0.321	0.330	0.306
Y	0.350	0.379	0.360	0.332
Reference CCT: 7600~5600k				

c0				
X	0.330	0.361	0.356	0.330
Y	0.360	0.385	0.351	0.318
Reference CCT: 5600~4600k				

c1				
X	0.321	0.366	0.361	0.330
Y	0.379	0.419	0.385	0.360
Reference CCT: 6000~4600k				

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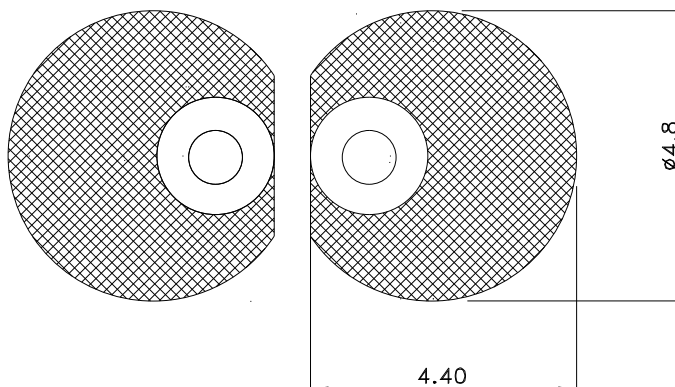
Wave Soldering Profile For Lead-free Through-hole LED.



NOTES:

1. Recommend the wave temperature 230°C~245°C. The maximum soldering temperature should be less than 245°C.
2. Do not apply stress on epoxy resins when temperature is over 85 degree°C.
3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
4. No more than once.

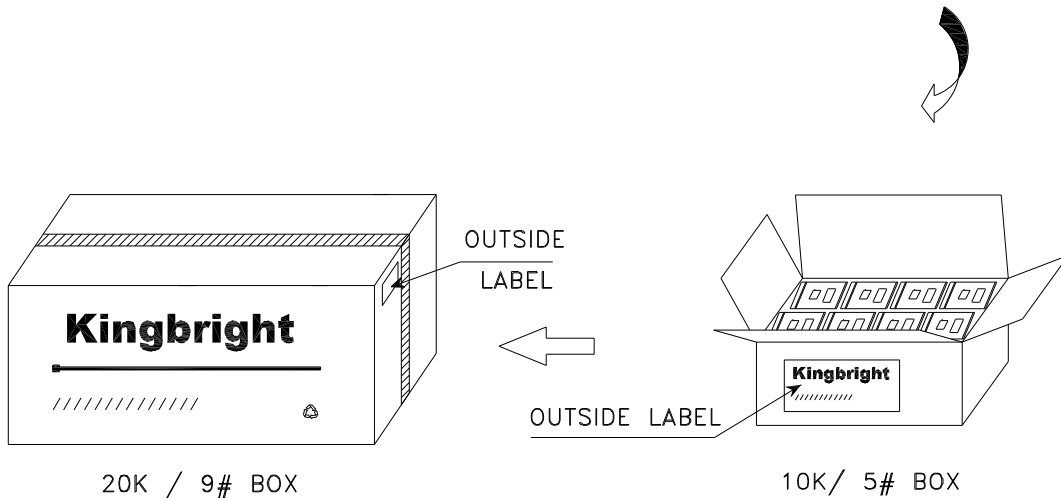
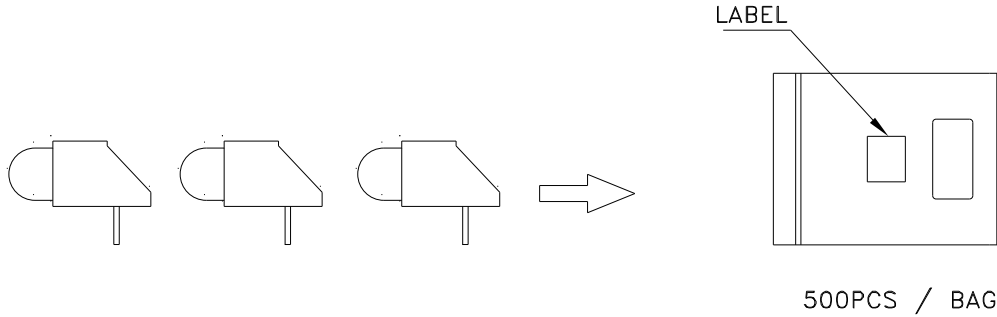
Recommended Soldering Pattern
(Units : mm; Tolerance: ±0.1)




Kingbright

PACKING & LABEL SPECIFICATIONS

WP1504CB/RWC/Z



<h1>Kingbright</h1>				
Q.C.	<table border="1"> <tr> <td style="text-align: center;">QC</td> </tr> <tr> <td style="text-align: center;">XX XX XX</td> </tr> <tr> <td style="text-align: center;">PASSED</td> </tr> </table>	QC	XX XX XX	PASSED
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XX XX XX				
PASSED				
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QUANTITY : 500 pcs				
S/N : XX	CODE: XX			
LOT NO :  <small>xx-xxxxx</small>				
RoHS Compliant				