LEKOLED

LKL-HP LED
Single Color

Features:

- High cost performance
- Red copper base
- high thermal conductivity
- Reflow soldering available
- Great Color consistency
- RoHS compliant
- Long life span

- Landscape lighting
- Plant Growth
- Traffic signal lighting
- Stage lighting
- Architectural lighting

Table of Content:

Characteristics

Characteristics	Unit	Min	Typical	Max
Dimension L*W	mm		14.5*8.05	
Diameter of Luminous Area Φ	mm		5.5	
Beam Angle 2θ1/2	deg.		120	
Wavelength WL	nm	450		660
Power Dissipation PD	W		1	5
Operating Temperature Top	°C	-40		+60
Storage Temperature Tst	°C	-40		+85
Testing Point Tc	°C			60
Junction Temperature Tj	°C			115
Reverse Current (Vr=5V) Ir	uA			10
Thermal Resistance Rj-c	°C/W		12	
ESD (HBM)	V			2000
Reflow Soldering(Lead-Free) ST	°C			180

Part Number Nomenclature

LKL —— HP —— R620 —— 1—— 40

Company Name	LED type	Color Type	Power	Lumen
LEKOLED	High Power LED	R620: 620-630nm G520: 520-530nm B460: 460-470nm	1: 1W	40: 40-60LM

LKL —— HP —— RGB —— 3 —— A

Company Name	SMD type	Color Type	Power	Lumen Grade
LKL	High Power LED	R: Red 620-630nm G: Green 520-530nm B: Blue 460-470nm	3: 3W	B S

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Specifications (Tc = 25°C)

1W @350mA

Color	Wavelength (nm)	Voltage (V)	Current (mA)	Lumen (LM)	Part Number
Red	620-630	2.0-2.6	350	30-50	LKL-HPR620130
				70-80	LKL-HPR620170
Green	520-530	2.8-3.4	350	60-80	LKL-HPG520160
				100-120	LKL-HPG5201100
	510-520	2.8-3.4	350	60-80	LKL-HPG510160
				100-120	LKL-HPG5101100
Blue	460-470	2.8-3.4	350	10-20	LKL-HPB460110
				20-30	LKL-HPB460120
	450-460	2.8-3.4	350	20-30	LKL-HPB450120
Yellow	585-595	2.8-3.4	350	30-40	LKL-HPY585130
				40-60	LKL-HPY585140
Amber	600-610	2.0-2.6	350	50-70	LKL-HPA600150
Deep Red	640-660	2.0-2.6	350	15-25	LKL-HPR640115
				20-30	LKL-HPR640120

3W @700mA

Color	Wavelength (nm)	Voltage (V)	Current (mA)	Lumen (LM)	Part Number
Red	620-630	2.2-2.8	700	120-130	LKL-HPR6203120
Green	520-530	3.2-4.0	700	200-240	LKLN-HPG5203200
	510-520	3.2-4.0	700	240-260	LKL-HPG5103240
Blue	460-470	3.2-4.0	700	40-60	LKL-HPB460340
	450-460	3.2-4.0	700	40-60	LKL-HPB450340
Yellow	585-595	3.2-4.0	700	100-110	LKL-HPGY5853100
Amber	600-610	2.2-2.8	700	70-90	LKL-HPBA600370
Deep Red	640-660	2.2-2.8	700	60-90	LKL-HPR640360

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Specifications (Tc = 25°C)

3 in 1 RGB LED

Color	Wavelength (nm)	Voltage (V)	Current (mA)	Lumen (LM)	Part Number
RGB (3 in 1)	620-630	2.2-2.8	400	30-40	LKL-HPRGB3S0103
	520-530	3.2-4.0	350	60-80	
	510-520	3.2-4.0	350	10-20	
RGB (3 in 1)	460-470	3.2-4.0	350	40-60	LKL-HPRGB3B0103
	450-460	3.2-4.0	350	80-100	
	585-595	3.2-4.0	350	30-50	

Notes:

Above charts include the most regular specs for color leds for reference.

Please consult sales representative for specs that are not listed or please visit www.lekoled.com.

Machine Tolerance ±3% on luminous flux and ±2nm on wavelength.

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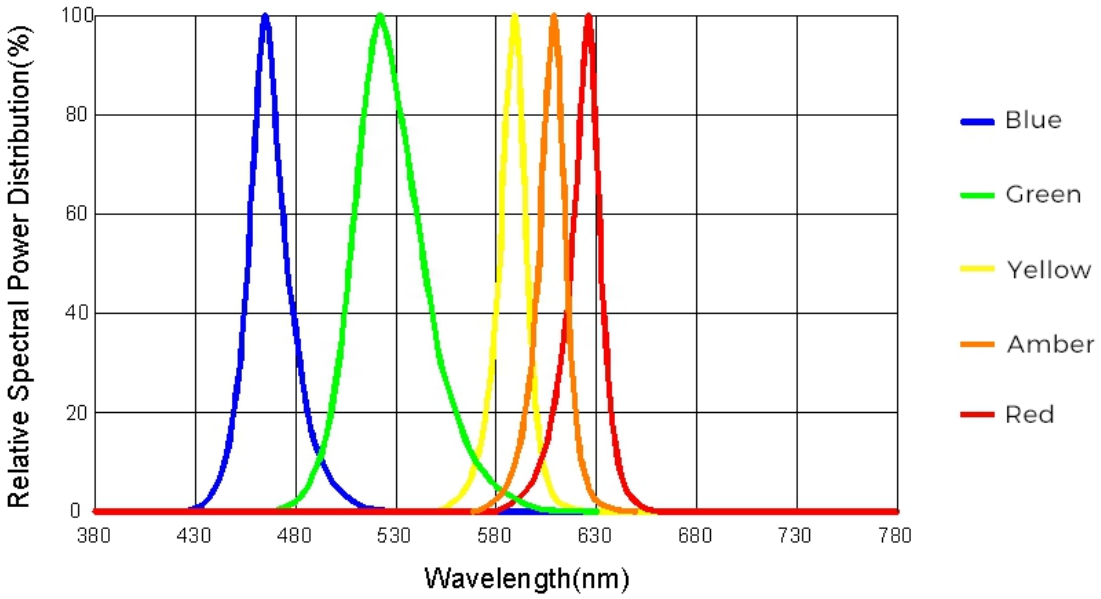
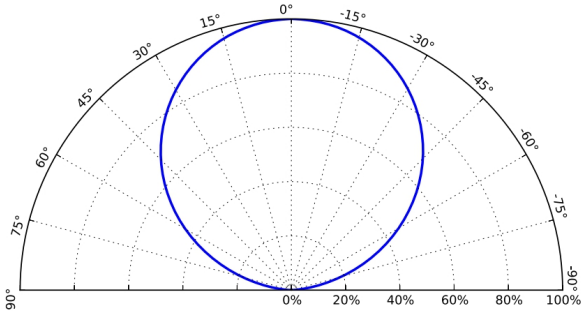
Spectral Features（Tc = 25°C)

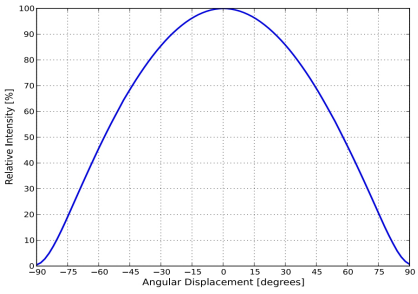


Typical Spatial Distribution (Tc = 25°C)

Intensity Distribution Diagram



Intensity Distribution Curve



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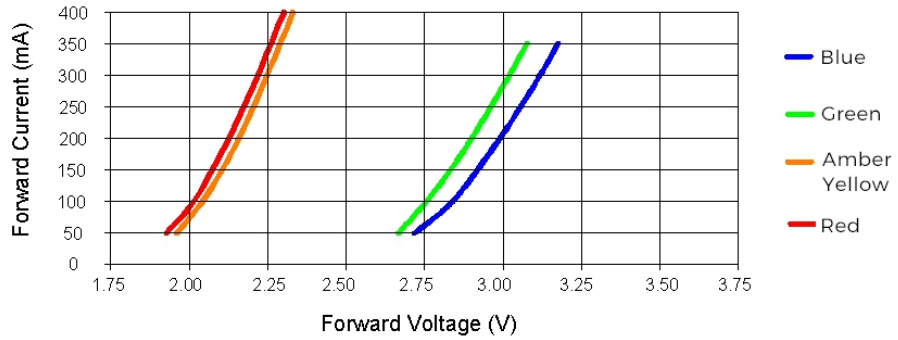
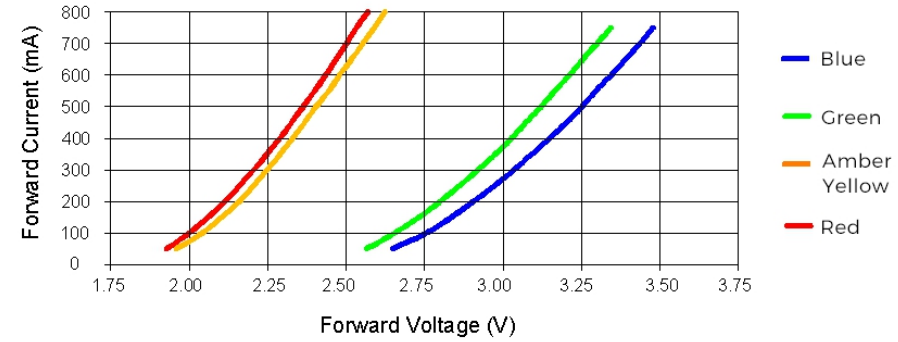
Electrical Features (Tc = 25°C)

1W

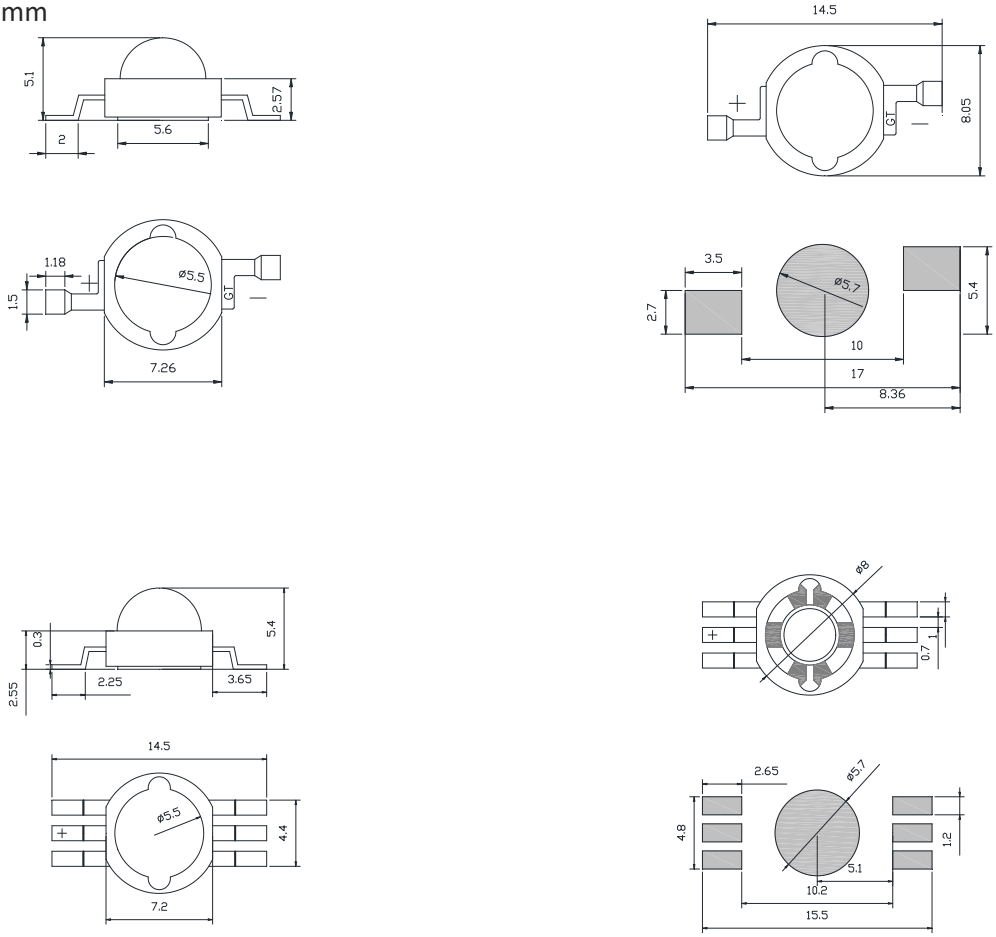


3W



Dimension (Unit:mm)

Tolerance+/-0.1mm



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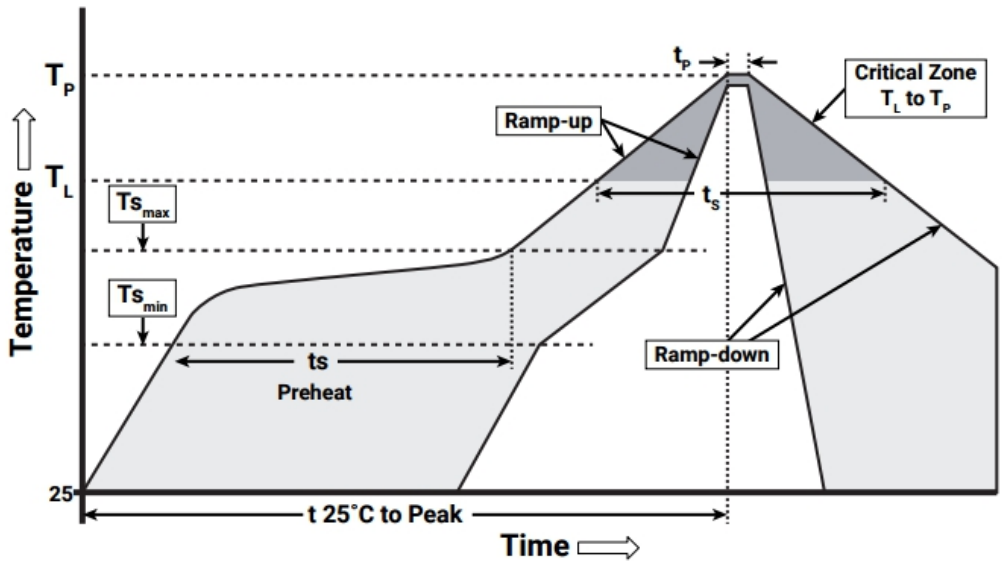
Reflow Soldering



Reflow Soldering Characteristics	Lead-free Solder	Soldering Iron	
Average Ramp Up (Ts max to Tp)	3 °C/second max.	Max.Temperature	Soldering Time
Preheat (Tsmin)	90 °C	350°C	3 Seconds/time
Preheat (Tsmax)	120 °C		
Preheat (tsmin to tsmax)	60-180 seconds		
Temp Maintenance: (TL)	150 °C		
Time Maintenance :(tL)	60-150 seconds		
Peak Temp (Tp)	180 °C		
(5°C before Reach 220 °C)(tp)	20-40 seconds		
Ramp Down	6 °C/second max.		
25°C(Time to Reach Peak Temp)	6 minutes max.		

Notes: The data in the document is juts for reference. Pleases do the initial inspection in accordance with the reflow soldering characteristics in data sheet strictly (Tolerance should be considered). Do not proceed mass production before initial inspection in order to avoid unnecessary loss.

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Reliability Tests

Test Items	Test Conditions	Sample Quantity	Ac/Re
Aging Test	IF=350mA/400mA Ta=25°C×1000hrs	22	0/1
	IF=350mA/400mA Ta=85°C×1000hrs	22	0/1
High Temperature Storage	100℃ × 1000 hours	22	0/1
Low Temperature Storage	-40℃ × 1000 hours	22	0/1
High Temp & Humidity	IF=350mA/400mA 85°C, 85 %RH for 1000 hours	22	0/1
Temperature Shock	-40℃ × 30 minutes – +100℃ × 30 minutes, 100 cycle	22	0/1
ESD (HBM)	2000V HBM/Time	10	0/1

Criteria for Judging Led Failure (Tc=25°C)

Items	Symbol	Test Conditions	Criteria for Judging LED Failure
Forward Voltage	VF	IF=350mA/400mA	>U × 1.1
Reverse Current	IR	VR=5V	IR≥10μA
Luminous Flux	ϕv	IF=350mA/400mA	<S × 0.7

U refers to max value； S refers to initial value.
Notes： Judging criteria based on Tc=25°C.

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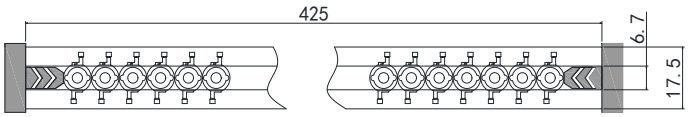
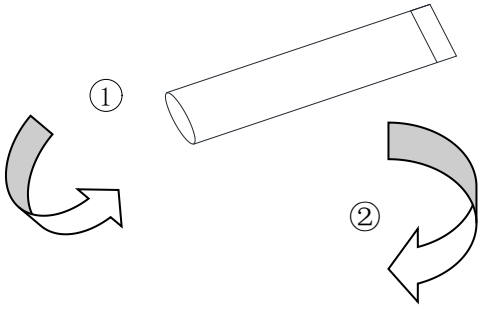
Packaging (Unit:mm)

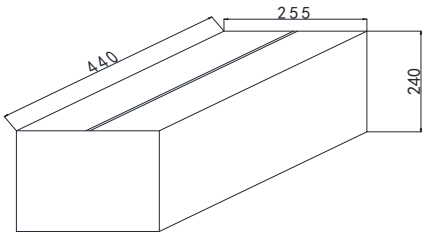
Packaging 1： Tube



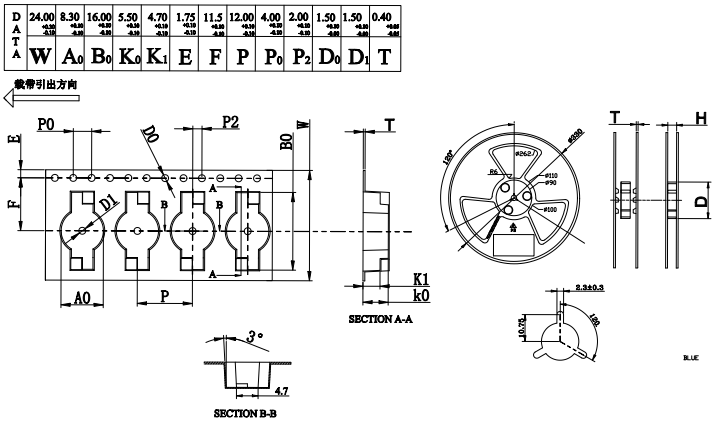


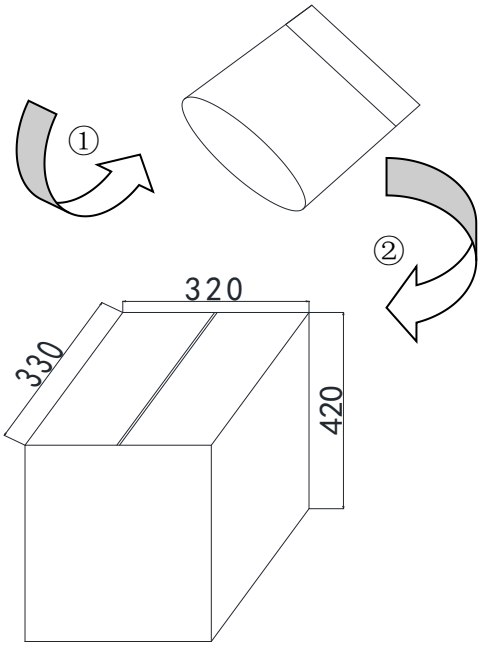
Standard Packaging Details

Tube: 50pcs/tube
Aluminum Foil Bag: 1000pcs/bag
Carton: 15Kpcs/carton



Packaging 2： Reel





Standard Packaging Details

Reel: 1000pcs/reel
Carton: 14Kpcs/carton

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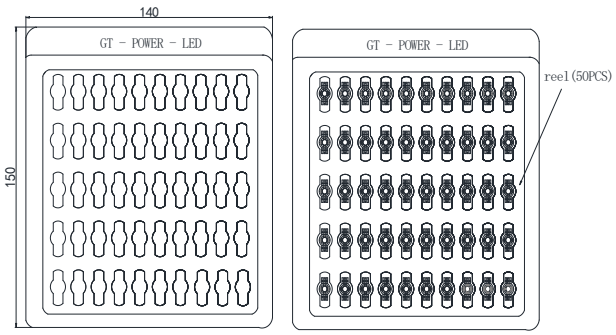
Packaging (Unit:mm)

Packaging 3： Plastic Tray



Standard Packaging Details

Tray: 50pcs/Tray
Aluminum Bag: 500pcs/Bag

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Precautions

Product Specifications

This is a product family data sheet without extra emphasis on a specific model. The specifications in the document refers to its general value under certain test conditions. Please consult sales representative or technical people if encounters specs that are not listed. (Tolerance should be considered).

Operation Tips

1. Reflow soldering is allowed only once.
2. Stencil thickness recommended 0.08mm.
3. Please don't use heating platform to solder the LEDs.
4. To protect the LED from damage, please don't impact or pile up the LEDs after reflow soldering.

Service Conditions

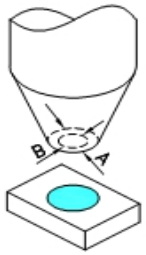
1.The LEDs should be dehumidified @65 °C ± 5 °C for 12 Hours when the aluminum moisture-proof bag opened for 1 week.

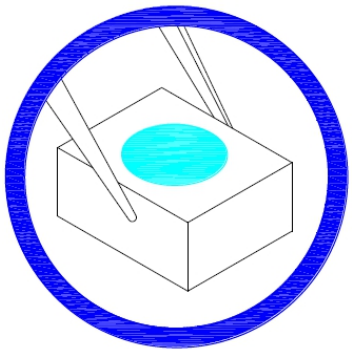
2. The products must be operated within the rated range of parameters. Constant current drivers are recommended.

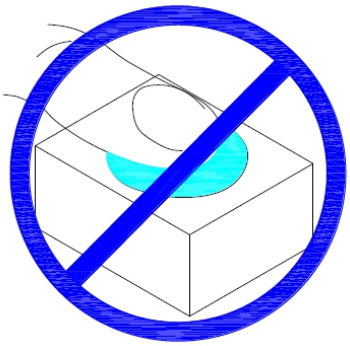
Installation

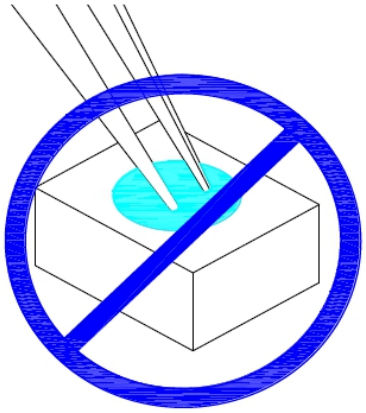
The LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when use the picking up nozzle, the pressure on the lens should be proper.

Handle the component along the side surface by using forceps or appropriate tools; Do not directly touch or handle the lens surface, it may damage the internal circuitry.









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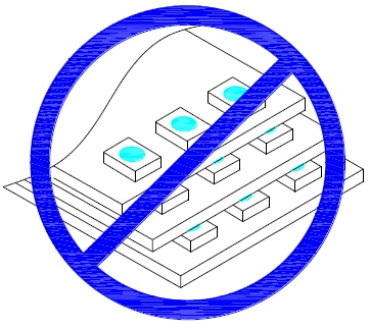
Precautions

Do not stack together assembled PCBs containing LEDs. Impact may scratch the silicone lens or damage the Internal circuitry



Not suitable to operate in acidic envi-ronment, PH<7

ESD Protection

Statics or surge volt would cause LED failure. When using the products, we suggest wearing anti-static wrist strap or gloves. All devices, equipment and machinery must be grounded. Precautions should be taken to protect the products from the surge voltage generated by the devices.

Heat Dissipation

The thermal design of the end product is particularly important, please consider it seriously. Do avoid high temperature condensation on the product.

Cleaning

Recommend ethanol as the only clean solvent.

Others

The bright light emitted by LED may hurt the eyes. Do not look directly at the products when not wearing protective glasses. The strong irritant glare makes people feel uncomfortable and precautions should be taken during usage.

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