LKL-HP LED Diode
IR Color

Features:

- High cost performance
- Red copper base
- high thermal conductivity
- Reflow soldering available
- Great Color consistency
- RoHS compliant, EN62471, LM-80
- Long life span

- Surveillance camera
- IR Sensor
- Monitor
- IR data transmission
- Plant growth

Table of Content:

LEKOLED Technology Corporation
www.lekoled.com

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	730		940
Power Dissipation PD	W		1	3
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			220

Part Number Nomenclature

LKL —— HP —— IR850 —— 3 —— 500

Company Name	LED type	Color Type	Power	Optical Power
LEKOLED	High Power LED	IR850: 850nm	1: 1W 3: 3W	500: 500-600mW

Specifications (Tc = 25°C)

Max.800mA

Color	Wavelength (nm)	Voltage (V)	Current (mA)	Optical Power (mW)	Part Number
IR	730-740	1.7-1.9	700	600-800	LKL-HPIR7303600
	850	1.5-1.7	700	500-550	LKL-HPIR8503500
	940	1.5-1.7	700	500-600	LKL-HPIR9403500

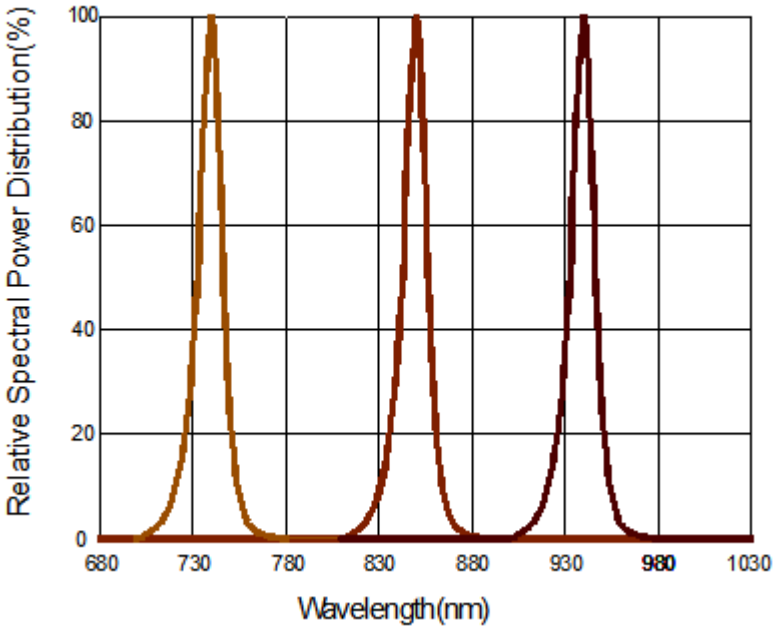
Notes:

Above charts include the most regular specs for reference.

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

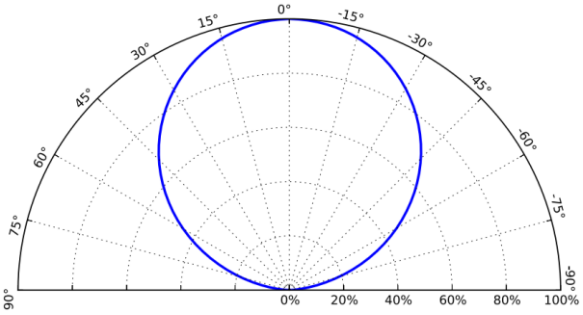
Machine Tolerance ±3% on optical power and ±2nm on wavelength.

Spectral Features（Tc = 25°C）

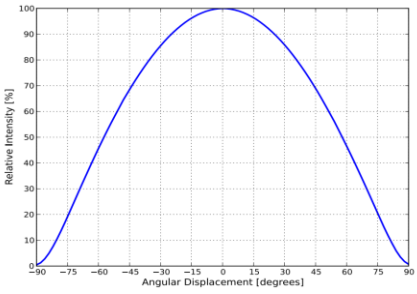


Typical Spatial Distribution (Tc = 25°C)

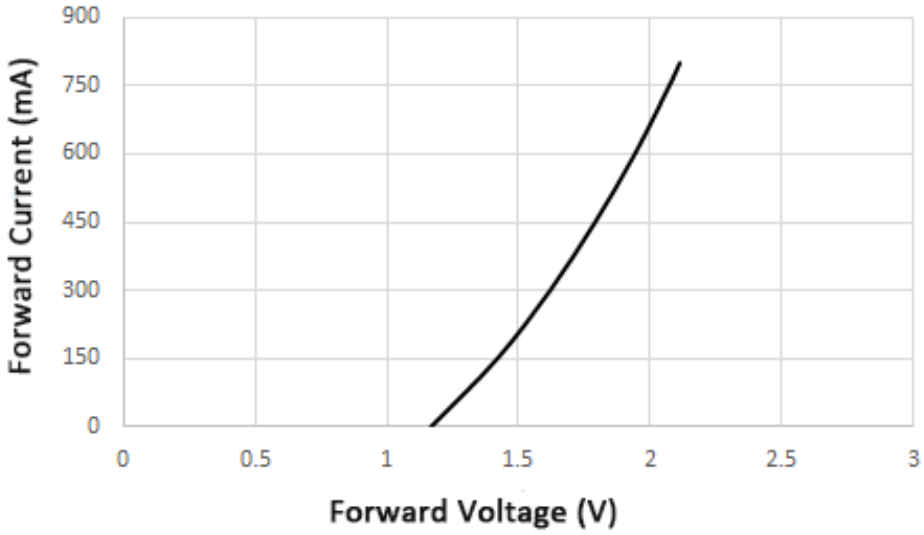
Intensity Distribution Diagram



Intensity Distribution Curve

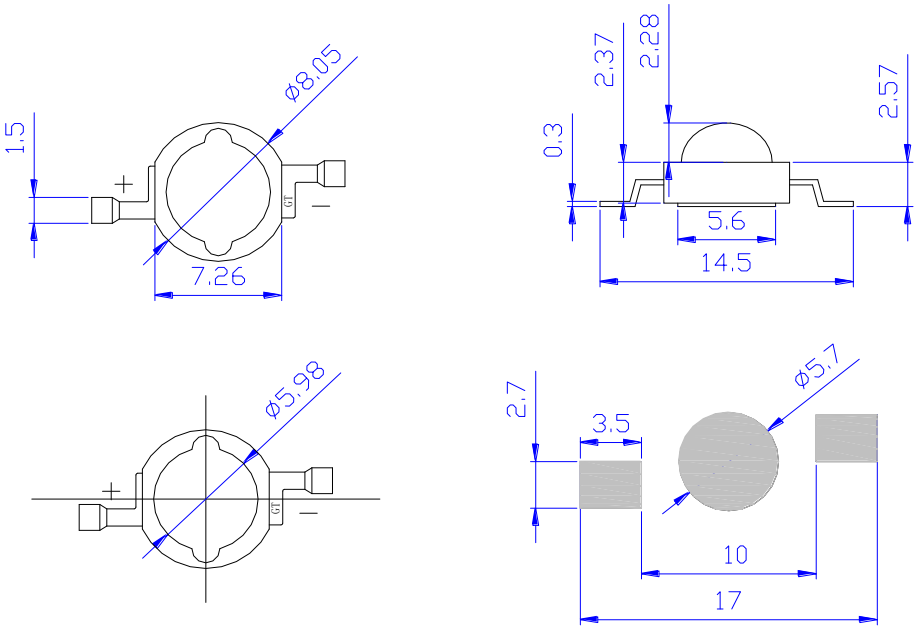


Electrical Features (Tc = 25° C)

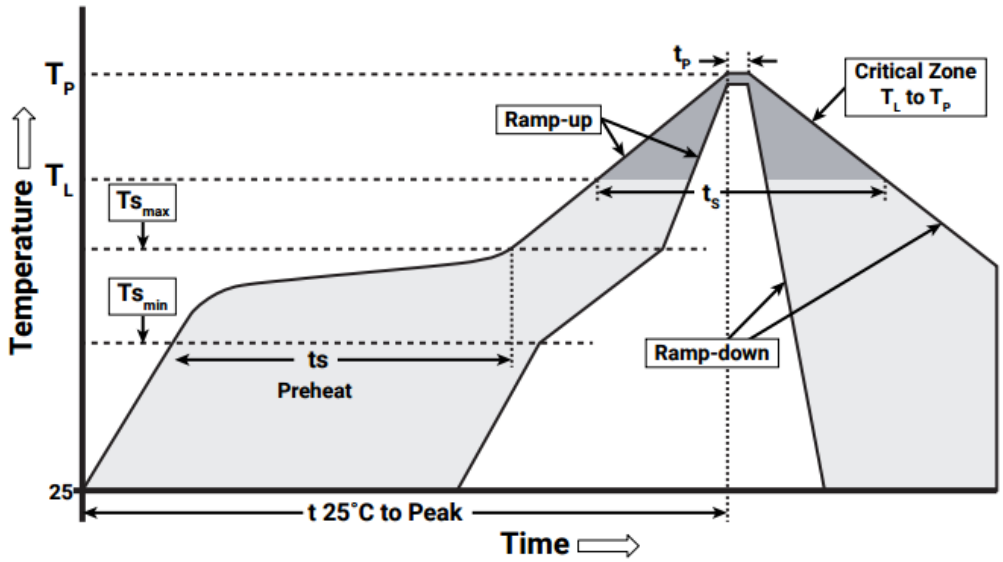


Dimension (Unit:mm)

Tolerance+/-0.1mm



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.

Reliability Tests

Test Items	Test Conditions	Sample Quantity	Ac/Re
Aging Test	IF=700mA Ta=25°C×1000hrs	22	0/1
	IF=700mA 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=700mA 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

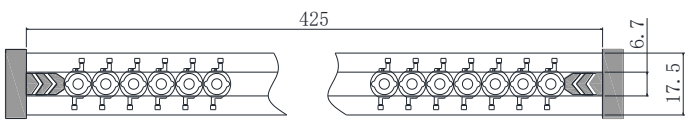
Criteria for Judging Led Failure (Tc=25°C)

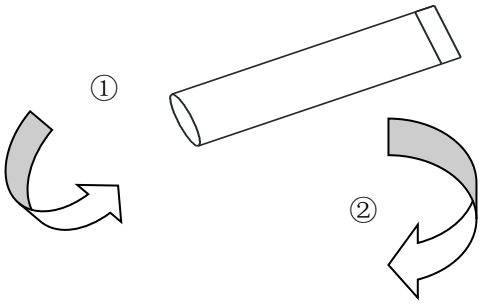
Items	Symbol	Test Conditions	Criteria for Judging LED Failure
Forward Voltage	VF	IF=700mA	>U × 1.1
Reverse Current	IR	VR=5V	IR≥10μA
Luminous Flux	ϕv	IF=700mA	<S × 0.7

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

Packaging (Unit:mm)

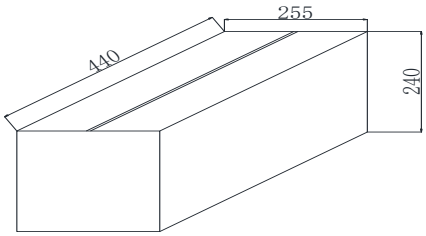
Packaging 1： Tube



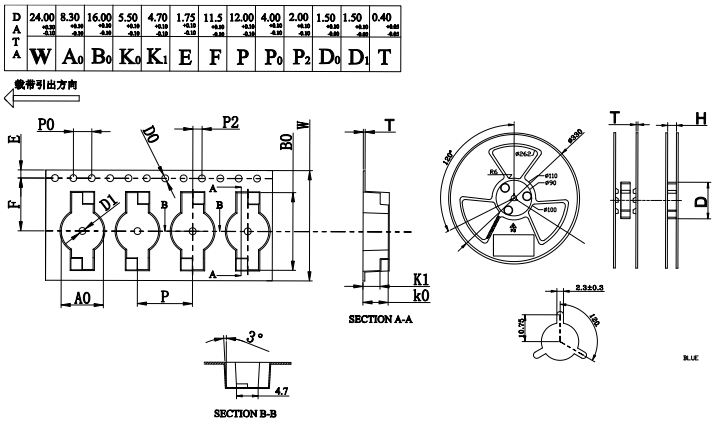


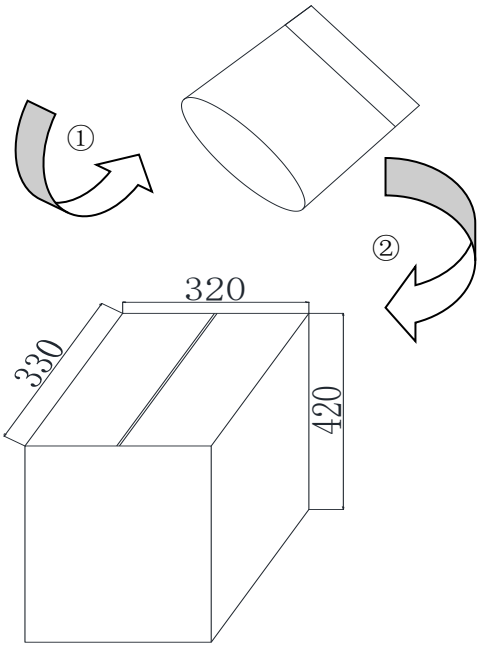
Standard Packaging Details

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



Packaging 2： Reel



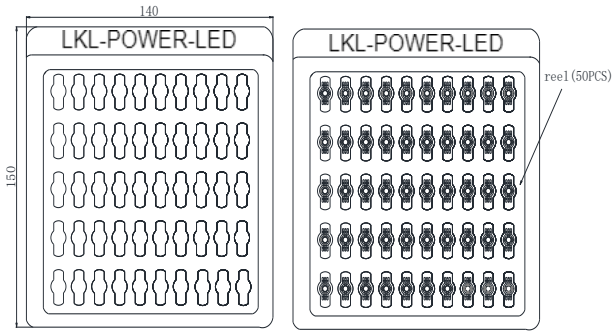


Standard Packaging Details

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

Packaging (Unit:mm)

Packaging 3： Plastic Tray



Standard Packaging Details

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

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

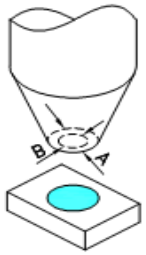
1.The LEDs should be dehumidified @65 °C ± 5 °C for 12 Hours when the aluminum moisture-proof bag opened for 1 week.

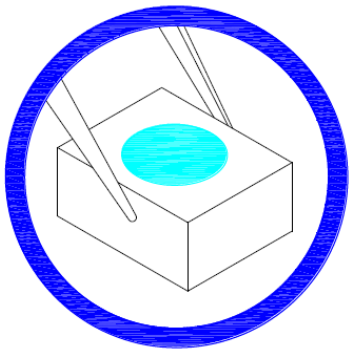
2. The products must be operated within the rated range of parameters. Constant current drivers are recommended.

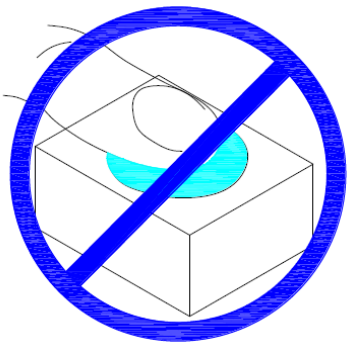
Installation

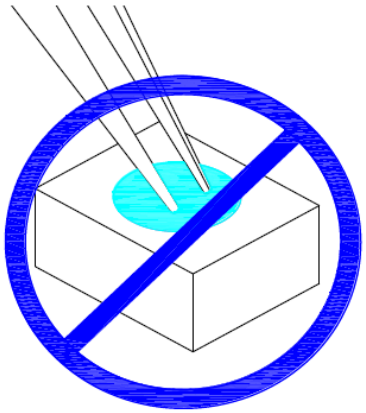
The LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when use the picking up nozzle, the pressure on the lens should be proper.

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.



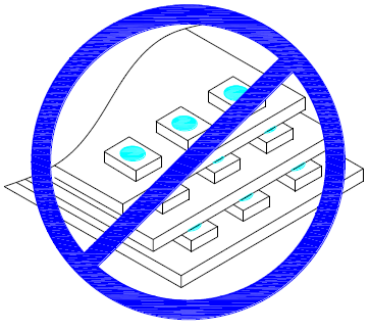






Precautions

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.