1-3W Color LED Series Datasheet

Features:

- Red Copper Base, 99.99% Purity Gold Wire, Famous Brand Chips
- High Lumen Output and High Efficacy
- Stable Quality & High Cost Performance
- Full Wavelength Available 365nm-850nm
- Enviromental Friendly; ROHS Compliance
- Customized Service Available

Applications:

- Traffice Singal Lighting
- Outdoor Landscape Lighting, Stage Lighting
- Flood Light, High Bay Light, Tunel Light and other LED Outdoor Lights
- LED Aquarium Light, LED Plant Growing Light..

TABLE OF CONTENTS

PRODUCT NAMING RULES----------3

CHARACTERISTICS----------4

LUMINOUS FLUX CHARACTERISTIC----------5

LUMINOUS FLUX CHARACTERISTIC----------6

LUMINOUS FLUX CHARACTERISTIC----------7

RELATIVE SPECTRAL POWER DISTRIBUTION----------8

CHARACTERISTIC CURVES----------9

RELIABILITY TESTS----------10

SOLDERING CONDITIONS----------11

DIMENSION----------12

DIMENSION----------13

DIMENSION----------14

PACKAGING----------15

PRECAUTIONS----------16

PRODUCT NAMING RULES

LKL	Power	Wavelength	Chip Size	Chip Quantity
LKL	XX	XX	X	X
LEKOLED	1W	RB: 440-450nm	2: 2345mil/ 2630mil	1: 1EA
	3W	B2: 450-460nm	3: 30mil/32mil/35mil/38mil	2: 2EA
		B3: 460-470nm	4: 42mil/45mil	3: 3EA
		G2: 520-530nm		4: 4EA
		Y4: 585-595nm		5: 5EA
		A6: 600-610nm		...
		R1: 620-630nm		
		DR: 660-665nm		
		IR1: 730-740nm		

Beam Angle	Brightness	Holder
X	XXX	XXX
0: 120°/140°	10: 10-15LM	G02: High temperature PC Lens
6: 60°	20: 20-30LM	G03: G02 with Star PCB
9: 90°	30: 30-50LM	MD: Molding tech. , Silicone Lens
	60: 60-80LM	G6P: 6 Pins RGB LED
	90: 90-100LM	G8P: 8 Pins RGBW LED
	...	G10P: 10 Pins RGBW LED
		G12P: 12 Pins RGBW LED

CHARACTERISTICS

Parameter	Unit	Min	Typical	Max
Dimension L*W	mm		14.5*8.05	
Diameter of Luminous Area	mm		5,5	
Power Dissipation	W		1-3	
Forward Current	mA	350		700
Forward Voltage	V	2,8		4.0
Wavelength	nm	365		850
Light Efficacy	LM/W	30		130
Beam Angle 2θ1/2	deg.		120	
Reverse Current	uA			10
Reverse Voltage	V			5
Operating Temperature Top	℃	-40		+60
Storage Temperature Tst	℃	-40		+85
Testing Point Tc	℃			60
Junction Temperature Tj	℃			115
Related thermal resistance Rj-c	℃/W		12	
ESD (HBM)	V			2000
Reflow Soldering (Lead-Free) ST	℃			180

LUMINOUS FLUX CHARACTERISTIC

Specifications (Tc=25℃)

Light Color	Wavelength (nm)	2.8-3.4V @350mA	1W Model No.	3.2-4.0V @700mA	3W Model No.
		LM		LM	
Blue	440-450	1. 10-15 2. 15-20	1.LKL-1WRB31010G02 2. LKL-1WRB41015G02	1. 20-30	1. LKL-3WRB41020G02
Blue	450-460	1. 10-15 2. 15-20	1.LKL-1WB231010G02 2. LKL-1WB241015G02	1. 20-30	1. LKL-3WB241020G02
Blue	460-470	1. 10-15 2. 15-20	1. LKL-1WB331010G02 2. LKL-1WB341015G02	1. 20-30	1. LKL-3WB341020G02
Green	520-530	1. 90-100 2. 100-120	1. LKL-1WG231090G02 2. LKL-1WG2410100G02	1. 160-180	LKL-3WG2410160G02

Light Color	Wavelength (nm)	2.0-2.6V @350mA	1W Model No.	2.2-2.8V @700mA	3W Model No.
		LM		LM	
Yellow	585-595	1. 40-50 2. 50-60	1. LKL-1WY431040G02 2. LKL-1WY441050G02	1. 70-90	1. LKL-3WY441070G02
Amber	600-610	1. 50-60	1. LKL-1WA641050G02	1. 70-90	1. LKL-3WA641070G02
Red	620-630	1. 40-50 2. 60-80	1. LKL-1WR131040G02 2. LKL-1WR141060G02	1. 90-100	1. LKL-3WR141090G02
Deep Red	660-665	1. 20-30 2. 30-50	1. LKL-1WDR31020G02 2. LKL-1WDR41030G02	1. 40-60	1. LKL-3WDR41040G02

Light Color	Wavelength (nm)	1.5-1.8V @350mA	1W Model No.	1.7-2.0V @700mA	3W Model No.
		LM		LM	
IR	730-740	/	LKL-1WIR1310G02	/	LKL-3WIR1410G02
IR	850	/	LKL-1WIR2410G02	/	LKL-3WIR2410G02

LUMINOUS FLUX CHARACTERISTIC

Specifications (Tc=25℃)

Light Color	Wavelength (nm)	Voltage/ Current/ Lumens	Model No.
RGB	620-630 520-530 460-470	R: 2.0-2.6V, 350mA, 30-40LM G: 2.8-3.4V, 350mA, 60-70LM B: 2.8-3.4V, 350mA, 10-20LM	LKL-3WRGB330G6P
	620-630 520-530 460-470	R: 2.0-2.6V, 350mA, 50-60LM G: 2.8-3.4V, 350mA, 100-110LM B: 2.8-3.4V, 350mA, 15-25LM	LKL-3WRGB330G6P
	620-630 520-530 460-470	R: 2.0-2.6V, 350mA, 90-100LM G: 2.8-3.4V, 350mA, 120-160LM B: 2.8-3.4V, 350mA, 20-30LM	LKL-3WRGB430G6P

Light Color	Wavelength/ CCT (nm/K)	Voltage/ Current/ Lumens	Model No.
RGBW	620-630 520-530 460-470 6000-6500	R: 2.0-2.6V, 350mA, 30-40LM G: 2.8-3.4V, 350mA, 60-70LM B: 2.8-3.4V, 350mA, 10-20LM W: 2.8-3.4V, 350mA, 70-80LM	LKL-4WRGBW340G8P
	620-630 520-530 460-470 6000-6500	R: 2.0-2.6V, 350mA, 40-50LM G: 2.8-3.4V, 350mA, 70-80LM B: 2.8-3.4V, 350mA, 15-25LM W: 2.8-3.4V, 350mA, 110-120LM	LKL-4WRGBW340G8P
	620-630 520-530 460-470 6000-6500	R: 2.0-2.6V, 350mA, 50-70LM G: 2.8-3.4V, 350mA, 120-160LM B: 2.8-3.4V, 350mA, 20-30LM W: 2.8-3.4V, 350mA, 140-150LM	LKL-4WRGBW440G8P

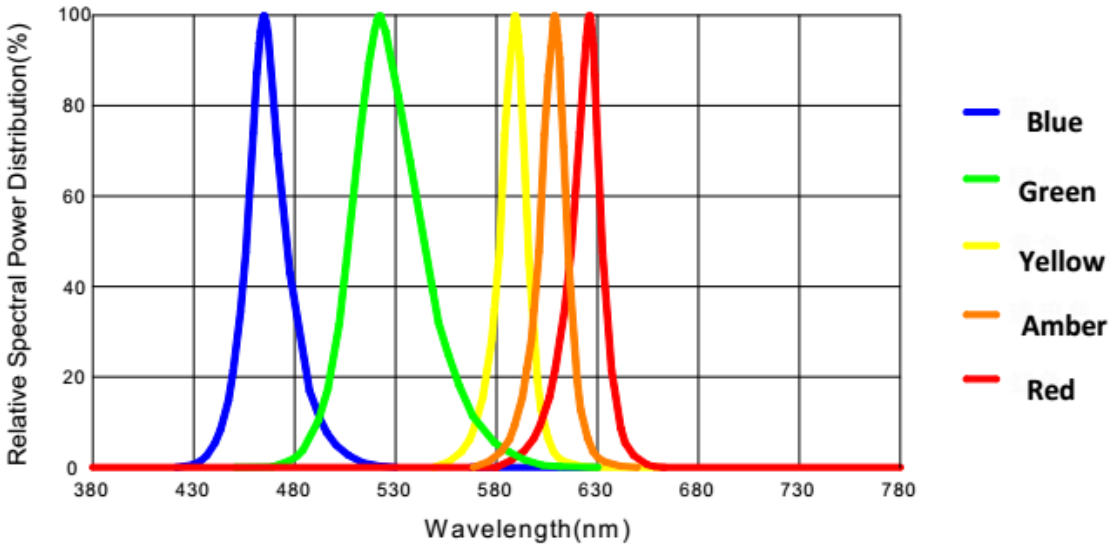
LUMINOUS FLUX CHARACTERISTIC

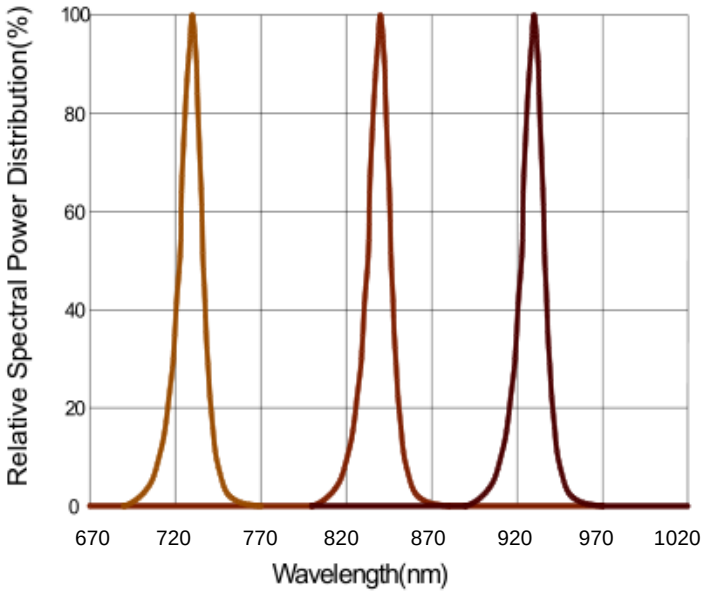
Specifications (Tc=25℃)

Light Color	Wavelength/ CCT (nm/K)	Voltage/ Current/ Lumens	Model No.
RGBWA	620-630 520-530 460-470 6000-6500 590-595	R: 2.0-2.6V, 350mA, 40-50LM G: 2.8-3.4V, 350mA, 80-90LM B: 2.8-3.4V, 350mA, 20-25LM W: 2.8-3.4V, 350mA, 100-120LM A: 2.0-2.4V, 350mA, 40-50LM	LKL-3WRGBWA350G12P
	620-630 520-530 460-470 6000-6500 590-595	R: 2.0-2.6V, 350mA, 60-70LM G: 2.8-3.4V, 350mA, 120-130LM B: 2.8-3.4V, 350mA, 20-30LM W: 2.8-3.4V, 350mA, 130-150LM A: 2.0-2.4V, 350mA, 60-70LM	LKL-3WRGBWA450G12P

Light Color	Wavelength/ CCT (nm/K)	Voltage/ Current/ Lumens	Model No.
RGBWAUV	620-630 520-530 460-470 6000-6500 590-595 390-400	R: 2.0-2.6V, 350mA, 40-50LM G: 2.8-3.4V, 350mA, 80-90LM B: 2.8-3.4V, 350mA, 20-25LM W: 2.8-3.4V, 350mA, 100-120LM A: 2.0-2.4V, 350mA, 40-50LM UV: 2.8-3.4V, 350mA, 10-20LM	LKL-6WRGBWAUV360G12P
	620-630 520-530 460-470 6000-6500 590-595 390-400	R: 2.0-2.6V, 350mA, 60-70LM G: 2.8-3.4V, 350mA, 120-130LM B: 2.8-3.4V, 350mA, 20-30LM W: 2.8-3.4V, 350mA, 130-150LM A: 2.0-2.4V, 350mA, 60-70LM UV: 2.8-3.4V, 350mA, 15-25LM	LKL-6WRGBWAUV460G12P

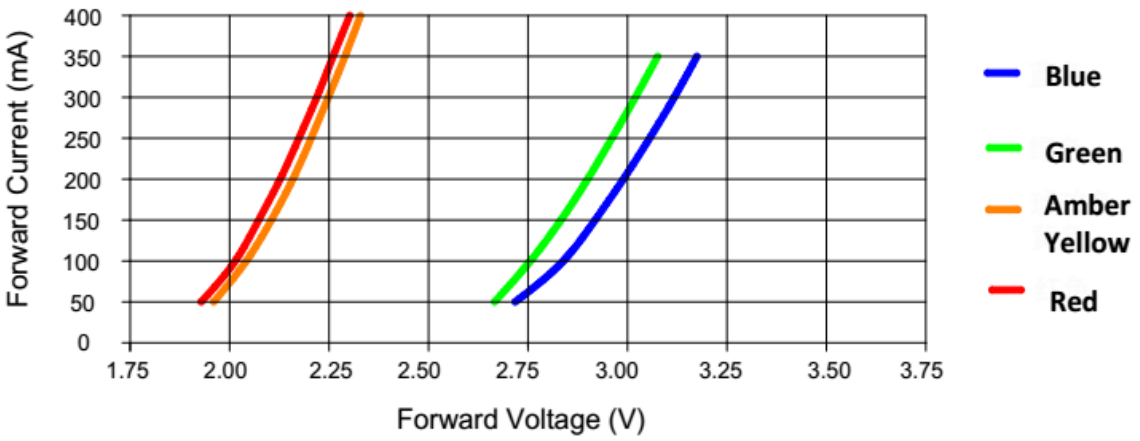
RELATIVE SPECTRAL POWER DISTRIBUTION



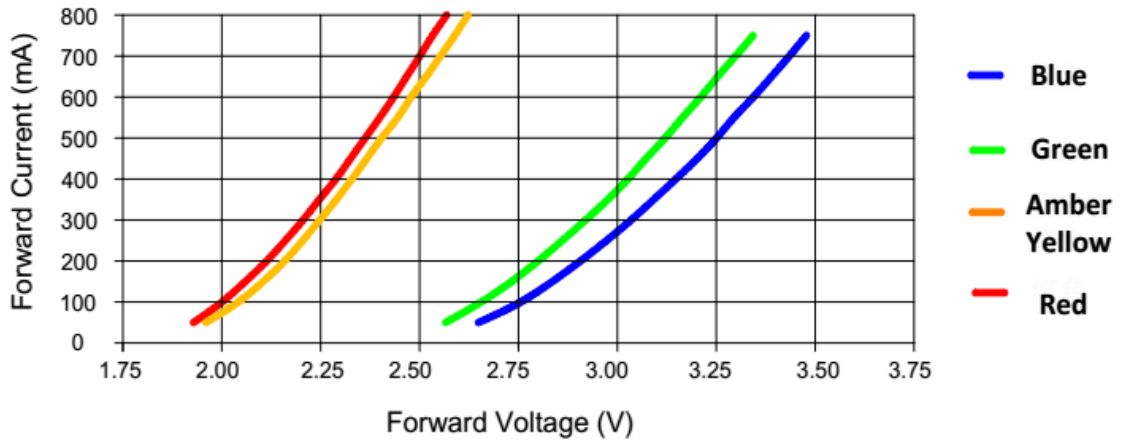


TYPICAL CHARACTERISTIC CURVES

350mA



700mA



RELIABILITY TESTS

Test Items	Test Conditions	Sample QTY	Ac/Re
Aging Test	IF=350-700mA, Ta=25℃ x6000hrs	22	0/1
	IF=350-700mA, Ta=85℃ x6000hrs	22	0/1
High Temperature Storage	100℃ x1000hrs	22	0/1
Low Temperature Storage	-40℃ x1000hrs	22	0/1
High Temp & Humidity	IF=350-700mA, 85℃, 85% RH for 6000hrs	22	0/1
Temperature Shock	-40℃x30 min & +100℃x30 min, 100cycle	22	0/1
ESD(HBM)	2000V HBM/ 1 Time	10	0/1

Criteria for Judging LED Failure (Tc= 25℃)

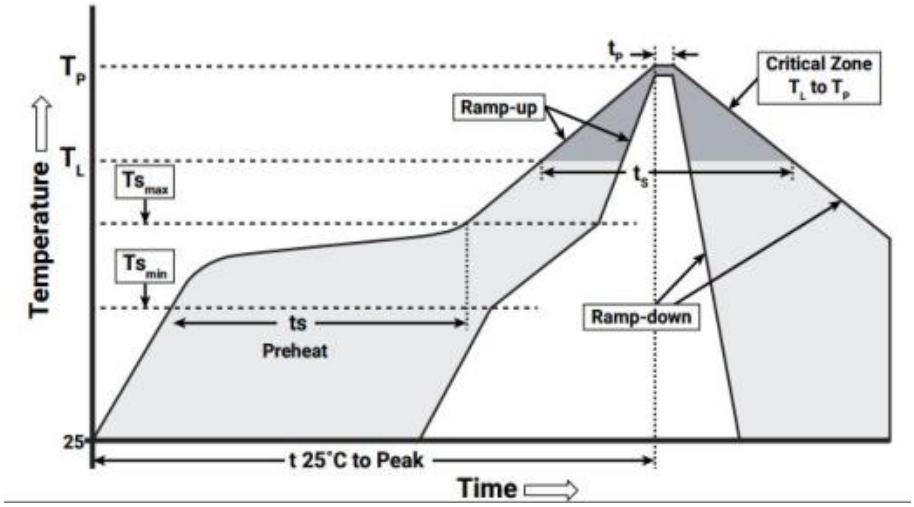
Items	Symbol	Test Conditions	Criteria for Judging LED Failure
Forward Voltage	VF	IF=350-700mA	>U x 1.1
Reverse Current	IR	VR=5V	IR>/= 10μA
Lumen	ΦV	IF=350-700mA	<S x 0.7

U refers to max value; S refers to initial value.

Notes: Judging criteria based on Tc=25℃.

TYPICAL CHARACTERISTIC CURVES

REFLOW SOLDERING PROFILE

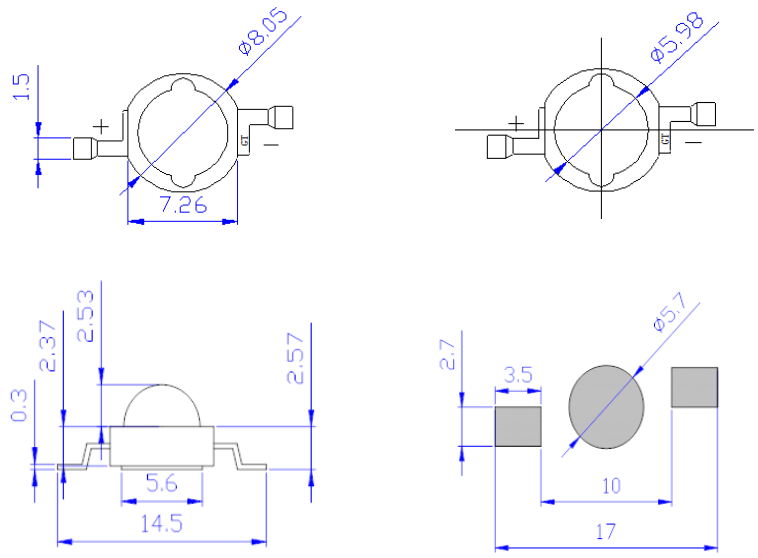


Profile Features	Solder Duration(PC Lens)	Soldering by Manual
Ramp-up Speed(Ts max to Tp)	3 °C/ second max.	Max. temperature: 350°C 3 seconds/1 time
Preheat: Min. Temperature(Tsmin)	90 °C	
Preheat: Max.Temperature(Tsmax)	120 °C	
Preheat: Time (tsmin to tsmax)	60~180 seconds	
Temperature to Keep: (TL)	150 °C	
Time to Keep: (tL)	60~150 seconds	
Peak Temperature (Tp)	180 °C	
Time within the peak temperature (tp)	20~40 seconds	
Ramp-down Speed	6°C/ second max.	
Time to the peak Temperature	8 minutes max.	

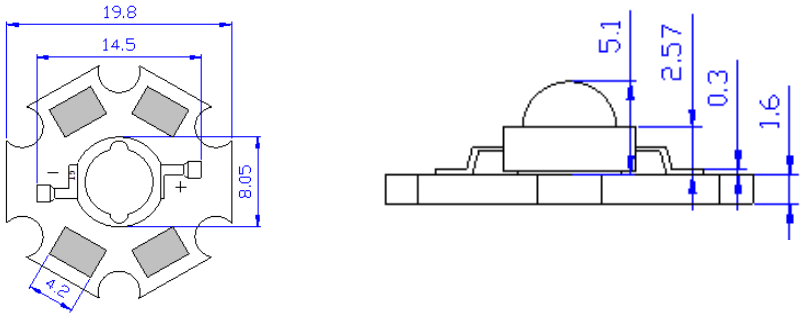
DIMENSIONS

Unit: mm

Holder Type: G02



Holder Type: G03



Notes：

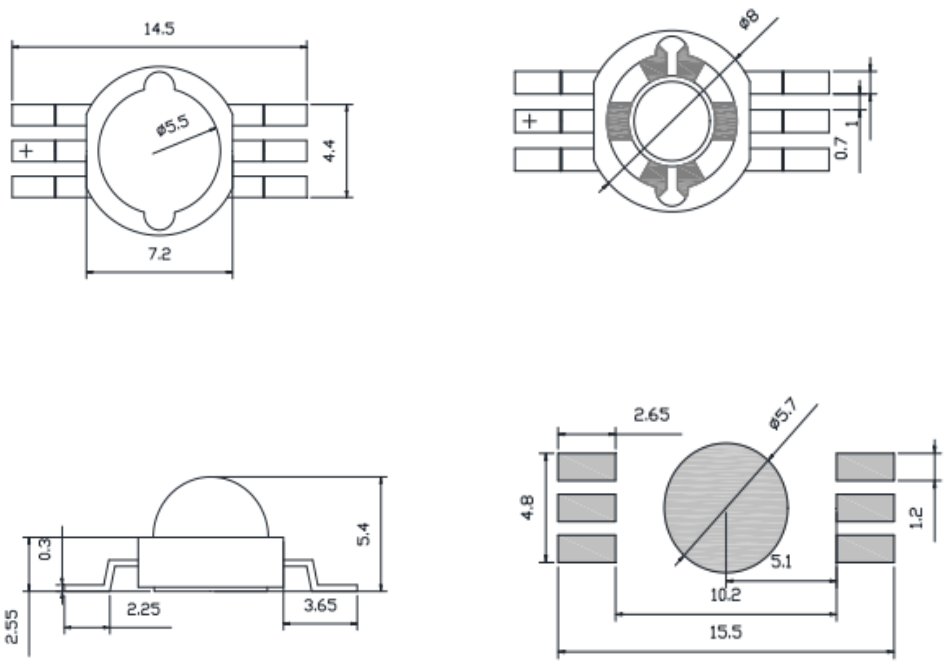
*All dimensions are in millimeters.(tolerance:±0.2mm)

*The appearance and specifications of the product may be changed for improvement without notice.

DIMENSIONS

Unit: mm

Holder Type: G6P



Notes：

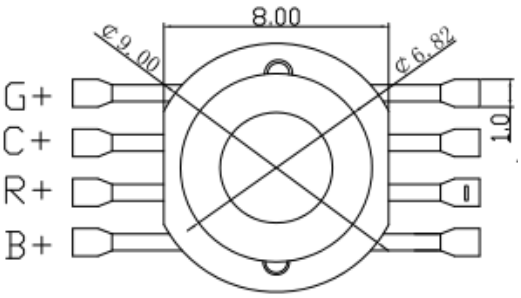
*All dimensions are in millimeters.(tolerance:±0.2mm)

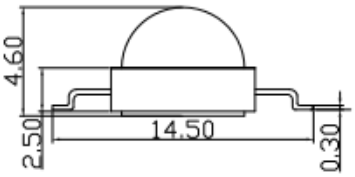
*The appearance and specifications of the product may be changed for improvement without notice.

DIMENSIONS

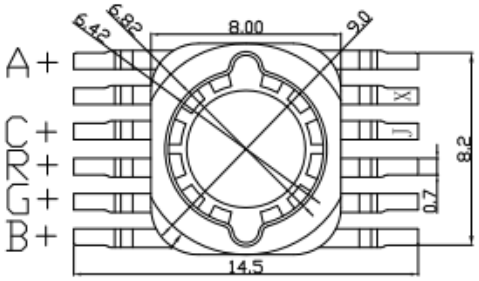
Unit: mm

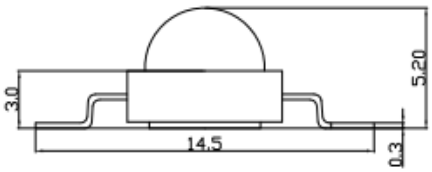
Holder Type: G8P





Holder Type: G12P





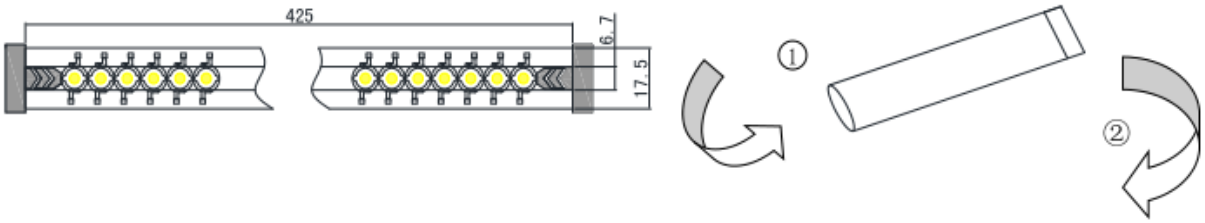
Notes：

*All dimensions are in millimeters.(tolerance:±0.2mm)

*The appearance and specifications of the product may be changed for improvement without notice.

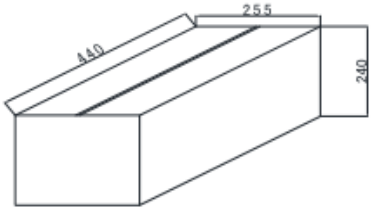
PACKAGING

Packaging ①: Tube

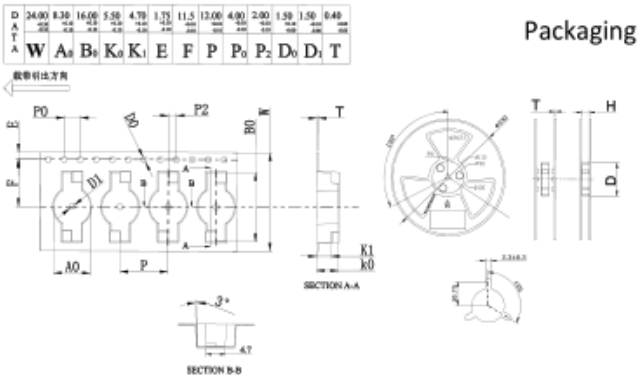


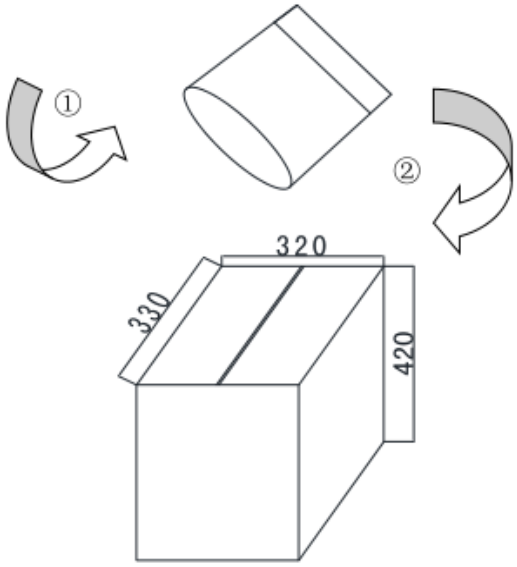
Standard Packaging Details

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



Packaging ②: Reel





Standard Packaging Details

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

PRECAUTIONS

Soldering

Reflow soldering is allowed only once. (Do not use heating platform)

Do not press the lens when soldering manually.

Do not squeeze the PCB board after reflow soldering.

The high temperature PC lens products can pass 180 ℃ reflow soldering.

Working Condition

The products must be operated within the rated range of parameters.

Installation

To avoid the led failure or deration to the lighting effects, do not burn the products' light-emitting layer by high temperature soldering iron during installation.

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. It is recommended to inspect each LED whether it is electrostatic damaged. Inspection can be done by a indicating lamp or low forward current test (suggest 90mA). The destroyed products shows different features, for example, the forward voltage becoming lower, or no light emission under low current.

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.