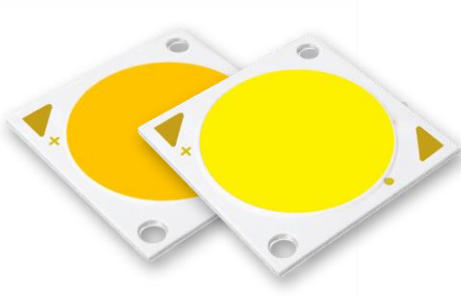




WLS-COB2828-XX



Features

Product Description

- high luminous efficacy 170lm/w
- mirror-surface aluminum base
- high intensity circular chip array
- RoHS compliant, EN62471
- > 50000 hrs
- professional super high CRI commercial

lighting

- Mac Adam 3 or 5 steps available
- smooth light quality

Application

Commercial lighting;
High bay light,
Street light, etc.

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Characteristics	Unit	Min	Typical	WLS-COB2828 ...Max
Dimension L*W	mm		28*28	
Diameter of Luminous Area Φ	mm		24.5	
Beam Angle θ	deg.		120	
Color Temperature CCT	k	1800	4000	6500
Luminous Efficacy	lm/w	90		180
Color Rendering Index CRI	Ra	70	80	98
MacAdam Ellipse SDCM	step	3		5
Operating Temperature Top	°C	-40		+75
Storage Temperature Tst	°C	-40		+85
Testing Point Tc	°C			75
Junction Temperature Tj	°C			125
Reverse Current (Vr=5V) Ir	mA			1
ESD (HBM)	V			2000
Hand Soldering (Lead-Free) HST	°C			350

Characteristics

Coding Rules

Model	WLS	COB	2828	XX	X	X	X	X	XX
Code	WLS	COB	Type	Emitting Color	Chip Size	Chip QTY	Beam Angle	Power	Brightness Grade
Meaning	WLS	COB Series	2828	W3:2850-3150 W35:3350-3650 W4:3800-4200 W5:4800-5200	1 2 3	144:144EA 216:216EA 324:324EA	0:120°	37:37.5W 56:56.3W 84:84.4W	100:100-110 110:110-120 120:120-130 140:140-150 150:150-160 160:160-170



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Specifications (Tc = 25°C)

Standard If: 1080mA Typical Vf: 34.8V Power: 37.5W Max Current: 2160mA Pulse Current: 2760mA Thermal Resistance: 0.52°C/W

Color	CCT (K)	Ra		34-41V @1080mA lm/w	Part Number	@2160mA lm/w
		Min Ra	Min R9			
Warm White	3000	80	0	140-150	WLS-COB2828W32144037140	120-130
		90	50	120-130	WLS-COB2828W32144037120	100-110
	3500	80	0	140-150	WLS-COB2828W352144037140	120-130
		90	50	120-130	WLS-COB2828W352144037120	100-110
Neutral White	4000	80	0	150-160	WLS-COB2828W42144037150	130-140
		90	50	120-130	WLS-COB2828W42144037120	100-110
Pure White	5000	70	/	160-170	WLS-COB2828W52144037160	140-150
		80	0	150-160	WLS-COB2828W52144037150	130-140

Standard If: 1080mA Typical Vf: 52.2V Power: 56.3W Max Current: 2160mA Pulse Current: 2760mA Thermal Resistance: 0.39°C/W

Color	CCT (K)	Ra		50-61V @1080mA lm/w	Part Number	@2160mA lm/w
		Min Ra	Min R9			
Warm White	3000	80	0	130-140	WLS-COB2828W32216056130	110-120
		90	50	110-120	WLS-COB2828W32216056110	90-100
	3500	80	0	130-140	WLS-COB2828W352216056130	110-120
		90	50	110-120	WLS-COB2828W352216056110	90-100
Neutral White	4000	80	0	140-150	WLS-COB2828W42216056140	120-130
		90	50	120-130	WLS-COB2828W42216056120	100-110
Pure White	5000	70	/	150-160	WLS-COB2828W52216056150	130-140
		80	0	140-150	WLS-COB2828W52216056140	120-130



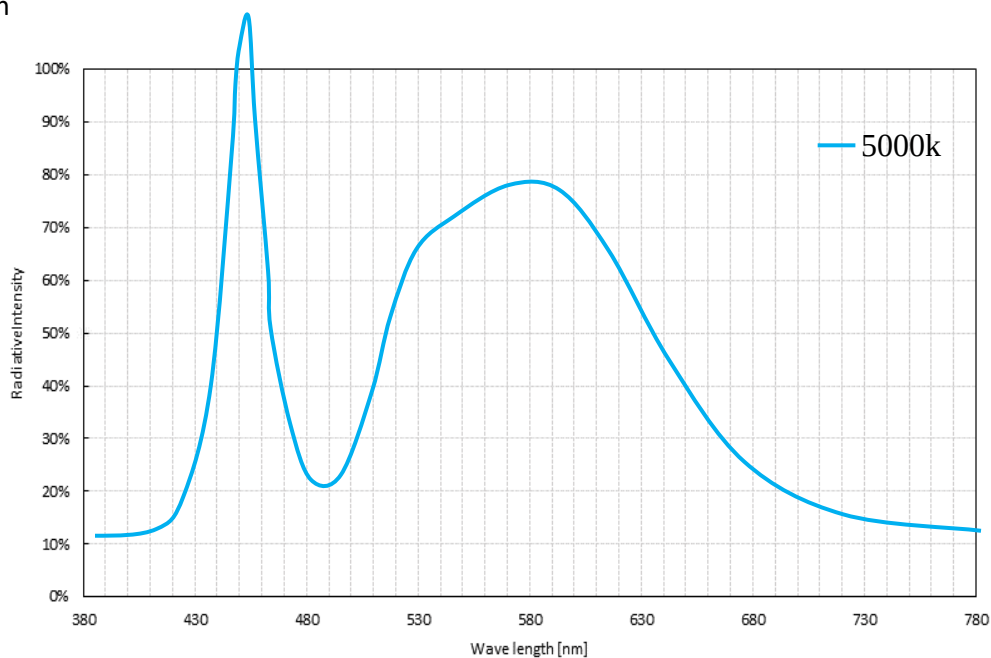
Specifications (Tc = 25°C)

Standard If: 1620mA Typical Vf: 52.2V Power: 84.5W Max Current: 3240mA Pulse Current:4140mA Thermal Resistance: 0.26°C/W

Color	CCT (K)	Ra		100-122V @1250mA lm/w	Part Number	@1450mA lm/w
		Min Ra	Min R9			
Warm White	3000	80	0	130-140	WLS-COB2828W32324084130	110-120
		90	50	110-120	WLS-COB2828W32324084110	90-100
	3500	80	0	130-140	WLS-COB2828W352324084130	110-120
		90	50	110-120	WLS-COB2828W352324084110	90-100
Neutral White	4000	80	0	140-150	WLS-COB2828W42324084140	120-130
		90	50	120-130	WLS-COB2828W42324084120	100-110
Pure White	5000	70	/	150-160	WLS-COB2828W52324084150	130-140
		80	0	140-150	WLS-COB2828W52324084140	120-130

Spectral Features (Tc = 25°C)

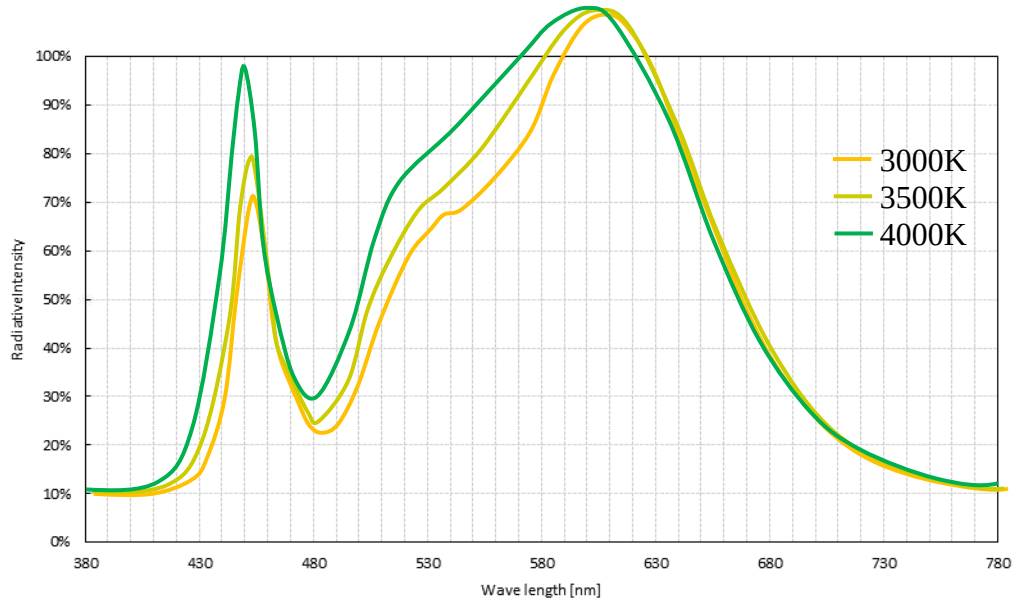
CRI(Ra) 70Min



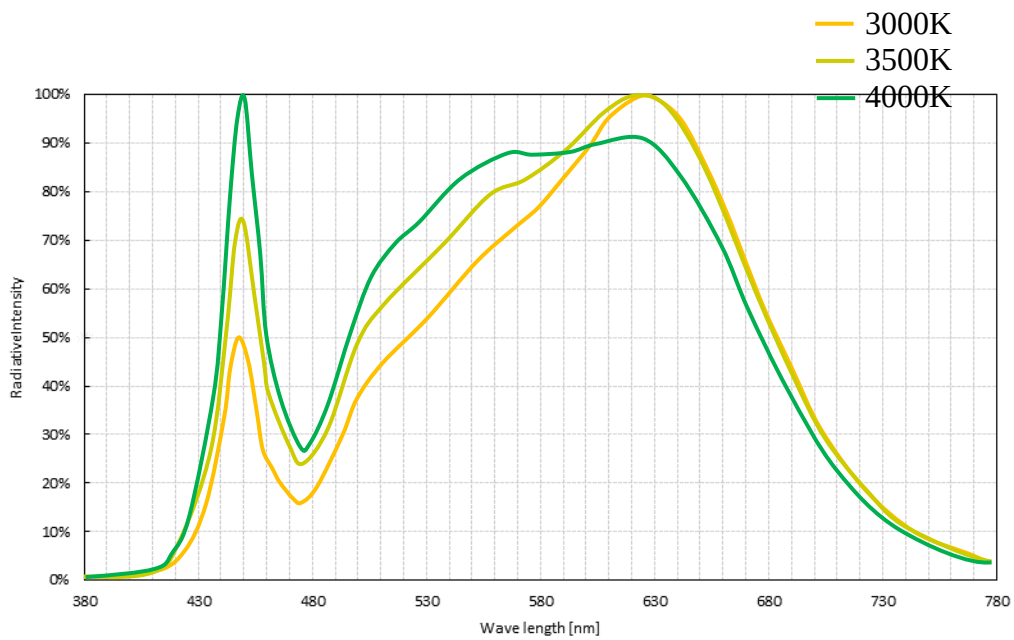


Spectral Features (Tc = 25°C)

CRI(Ra) 80Min

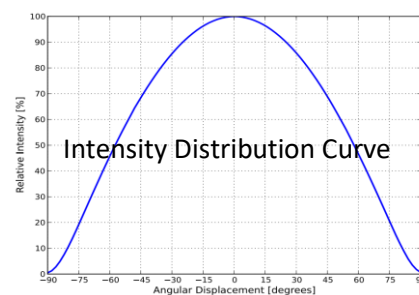
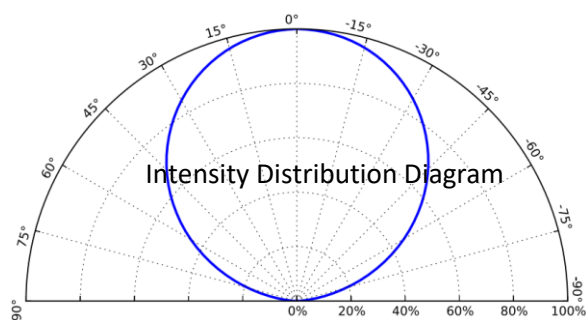


CRI(Ra) 90Min



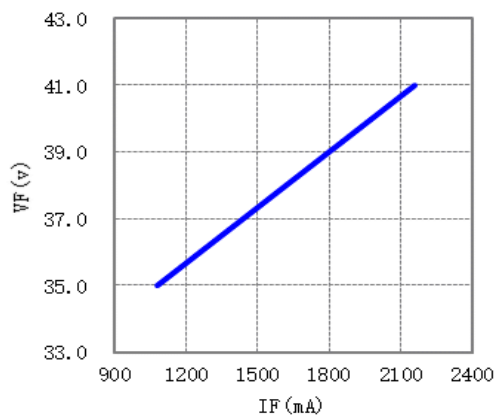


Typical Spatial Distribution($T_c = 25^{\circ}\text{C}$)

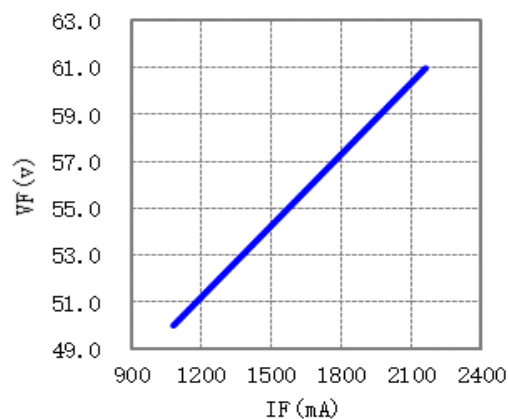


Electrical Features ($T_c = 25^{\circ}\text{C}$)

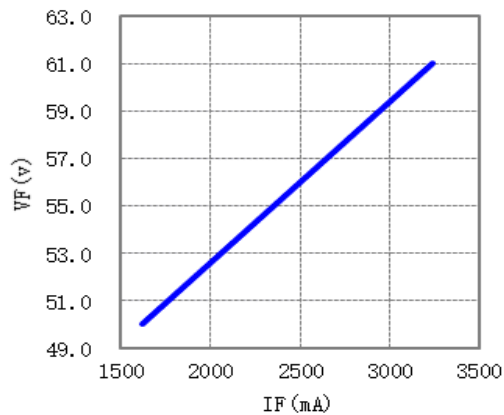
Standard Power: 37.5W



Standard Power: 56.3W

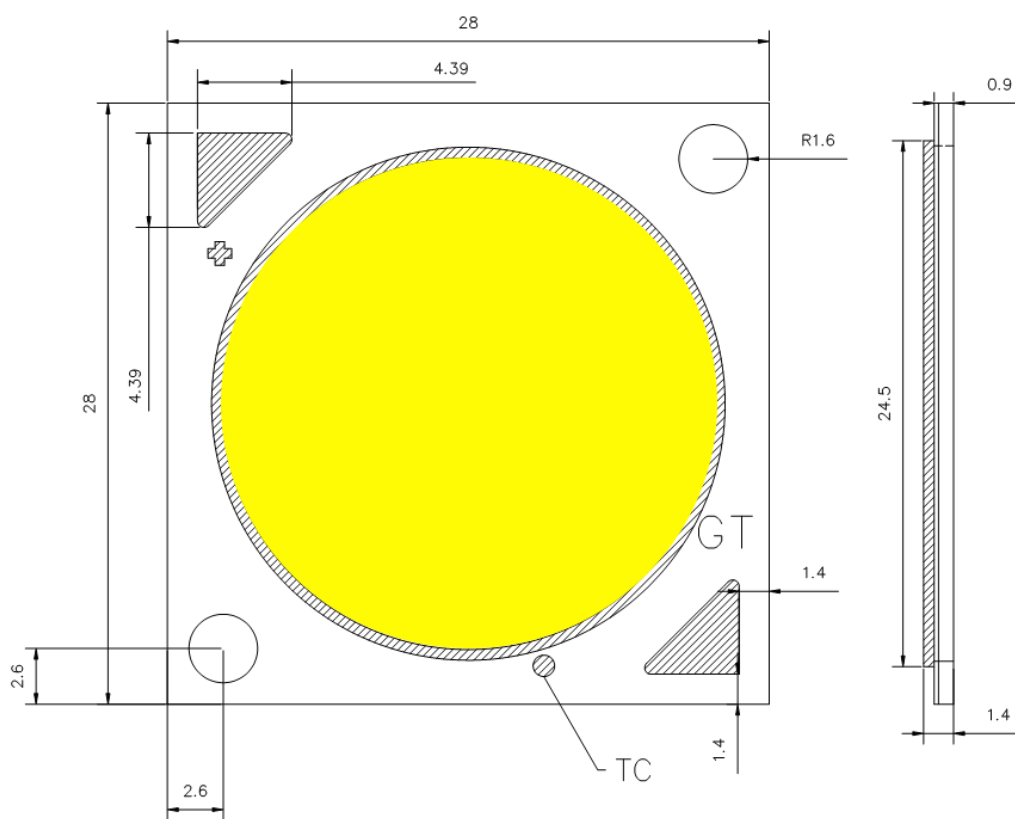


Standard Power: 84.5W





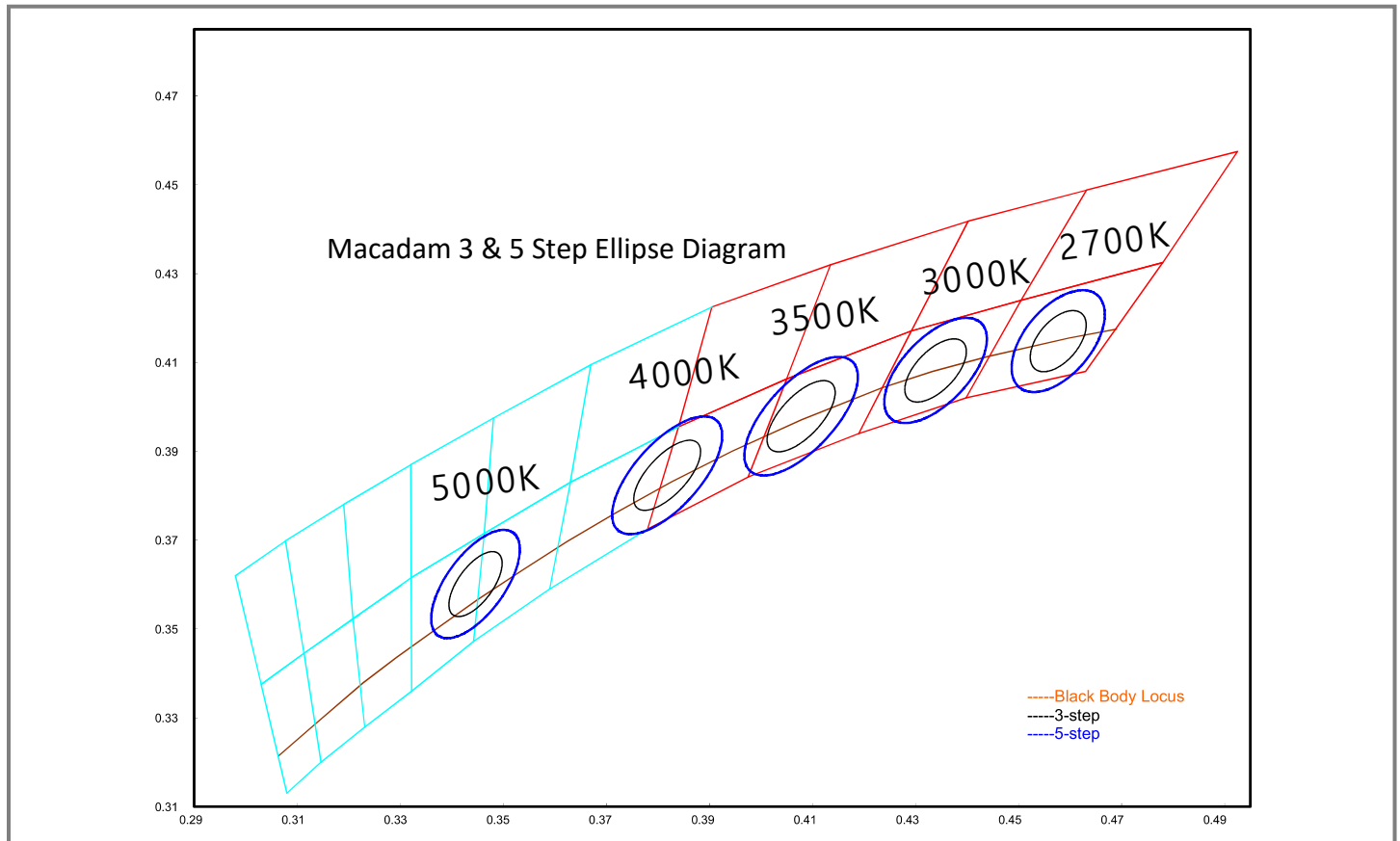
Tolerance+/-0.3mm





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CIE Diagram (1931CIE)



NOMINAL CCT	COLOR SPACE	CENTER POINT (cx, cy)	MAJOR AXIS, a	MINOR AXIS, b	ELLIPSE ROTATION ANGLE, θ
2700K	Single 3-step MacAdam ellipse	(0.4578, 0.4101)	0.00774	0.00411	57.28°
2700K	Single 5-step MacAdam ellipse	(0.4578, 0.4101)	0.01350	0.00700	53.70°
3000K	Single 3-step MacAdam ellipse	(0.4338, 0.4030)	0.00834	0.00408	53.22°
3000K	Single 5-step MacAdam ellipse	(0.4338, 0.4030)	0.01390	0.06800	53.22°
3500K	Single 3-step MacAdam ellipse	(0.4073, 0.3917)	0.00951	0.00417	52.97°
3500K	Single 5-step MacAdam ellipse	(0.4073, 0.3917)	0.01545	0.0690	54.00°
4000K	Single 3-step MacAdam ellipse	(0.3818, 0.3797)	0.00939	0.00402	54°
4000K	Single 5-step MacAdam ellipse	(0.3818, 0.3797)	0.01565	0.00670	53.72°
5000K	Single 3-step MacAdam ellipse	(0.3447, 0.3558)	0.00822	0.00354	59.62°
5000K	Single 5-step MacAdam ellipse	(0.3447, 0.3558)	0.01370	0.00590	59.62°



Reliability Tests

Test Items	Test Conditions
Aging Test	37.5W/IF=1080mA 56.3W/IF=1080mA 84.5W/IF=1620mA Ta=25°C×1000hrs
Aging Test	37.5W/IF=1080mA 56.3W/IF=1080mA 84.5W/IF=1620mA Ta=85°C×1000hrs
High Temperature Storage	100°C × 1000 hours
Low Temperature Storage	-40°C × 1000 hours
High Temp & Humidity	37.5W/IF=1080mA 56.3W/IF=1080mA 84.5W/IF=1620Ma 85°C, 85 %RH for 1000 hours
Temperature Shock	-40°C × 30 minutes – +100°C × 30 minutes, 100 cycle
ESD (HBM)	2000V HBM/Time

Items	Symbol	Test Conditions	Criteria for Judging LED Failure
Forward Voltage	VF	37.5W/IF=1080mA 56.3W/IF=1080mA 84.5W/IF=1620mA	>U × 1.1
Luminous Flux	φv	37.5W/IF=1080mA 56.3W/IF=1080mA 84.5W/IF=1620mA	<S × 0.7

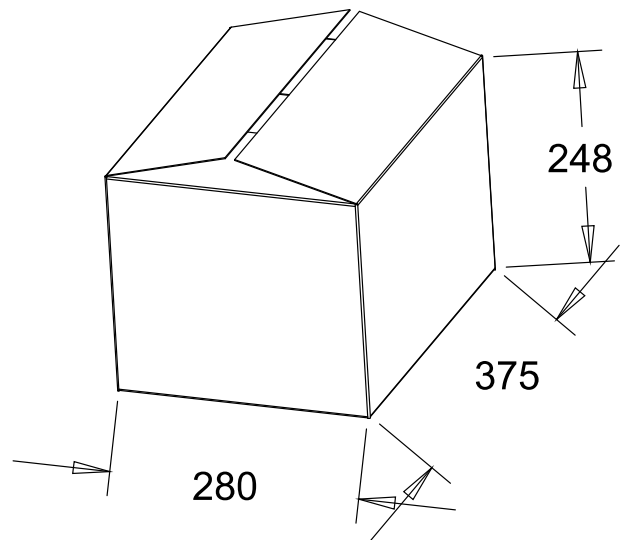
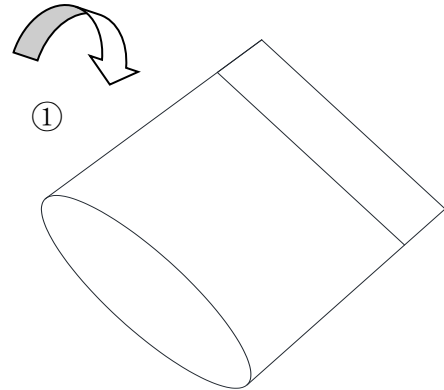
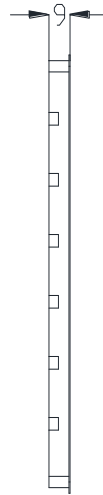
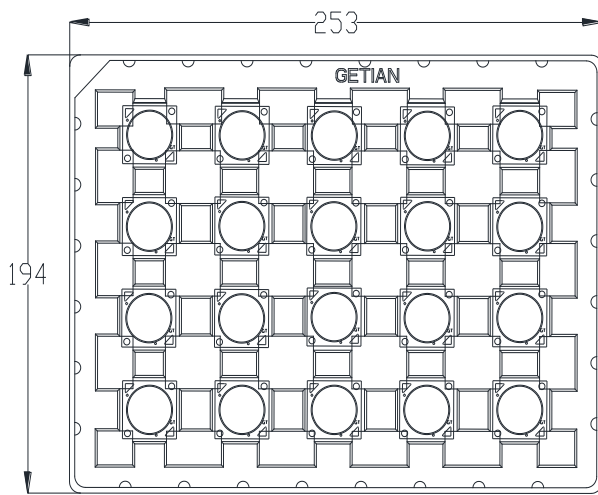
Criteria for Judging LED Failure (Tc=25°C)

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

Notes: Judging criteria based on Tc=25°C.



Packaging (Unit:mm)



Standard packaging:

Tray:20pcs/tray

Aluminum foil bag:180pcs/bag

Carton:1080pcs/carton



Notes

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. Please do not press emitting surface;
2. Please do not pour out products from trays or overlay them;
3. Keep the power supply lines 2-3mm striped and tin immersed;
4. Do not touch the emitting surface or the white dam by the soldering iron during soldering process;
5. Soldering time should be less than 5 seconds.;
6. Keep the soldering point clean and neat with no bulge, bend or cold-joint.
7. Instant test time less than 3 seconds.
8. Recommend to use thermal grease with conductivity >2.5.
9. Please keep the thermal grease inclusion-free;
10. Thermal grease spreading area should be a bit larger than the led substrate;
11. Thermal grease evenly spread with thickness about 0.1mm;
12. Place led flatly and do no push from side in case grease scraped;
13. Lens cover should be 0.2mm diameter larger than the COB emitting surface.

Service Conditions

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

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.