

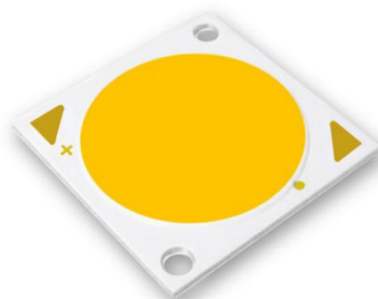
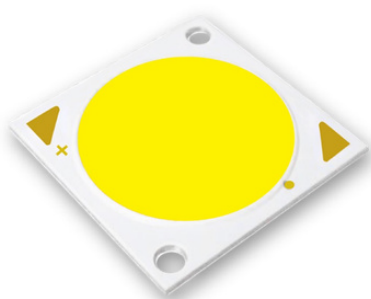


Application

down light, track light, projector light, flood light, high bay light, street light etc.
indoor/outdoor commercial lighting;

□ □

COB3838-XX



Product Description

COB series (Mirror-surface aluminum base), large luminous area with circular chip array design, is widely applied to high-end professional commercial lighting with ultimate high light efficacy, CRI and heat conduction. Its light efficacy is up to 170 lm/w. CRI can go up to 98 with smooth and cozy light quality which brings great experience of light. This series is optimized for down light, par light, spot light, track light and projector lamp etc,

50-500W effectively replaces halogen lamp and incandescent lamp, etc.

Features

- high luminous efficacy 170lm/w
- mirror-surface aluminum base
- high intensity circular chip array
- RoHS compliant, EN62471
- > 50000 hrs
- super high CRI
- Mac Adam 3 or 5 steps available
- smooth light quality

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Characteristics

Characteristics	Unit	Min	Typical	Max
Dimension L*W	mm		38*38	
Diameter of Luminous Area Φ	mm		35.5	
Beam Angle θ	deg.		120	
Color Temperature CCT	k	4000	5000	5000
Luminous Efficacy	lm/w	90		180
ColorRenderingIndex CRI	Ra	70	80	98
MacAdamELlipse SDCM	step	3		5
OperatingTemperature Top	°C	-40		+75
StorageTemperature Tst	°C	-40		+85
TestingPoint Tc	°C			75
JunctionTemperature Tj	°C			125
ReverseCurrent(Vr=5V) Ir	mA			1
ESD (HBM)	V			2000
HandSoldering(Lead-Free) HST	°C			350

Coding Rules

Model		COB	3838	XX	X	X	X	X	XX
Code		COB	Type	Color	Chip Size	Chip QTY	Beam Angle	Power	Brightness Grade
Meaning		COB Series	3838	W4:3800-4200 W5:4800-5200	1 2 3	450:450E A 648:648E A	0:120 °	117:117.4W 169:169W	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: 2250mA		Typical Vf: 52.2V		Power:117.4W MaxCurrent:4500mA		Pulse Current: 5750mA	Thermal Resistance: 0.22°C/W
Color	CCT (K)	Ra		51-61V @2250mA lm/w	Part Number		@4500mA lm/w
		Min. Ra	Min. R9				
Neutral White	4000	70	/	150-160	COB3838W424500117150		130-140
		80	0	140-150	COB3838W424500117140		120-130
Pure White	5000	70	/	150-160	COB3838W524500117150		130-140
		80	0	140-150	COB3838W524500117140		120-130

Standard If: 1620mA		Typical Vf: 104.4V		Power:169W MaxCurrent:3240mA		Pulse Current: 4140mA	Thermal Resistance: 0.15°C/W
Color	CCT (K)	Ra		100-122V @1620mA lm/w	Part Number		@3240mA lm/w
		Min. Ra	Min. R9				
Neutral White	4000	70	/	150-160	COB3838W426480169150		130-140
		80	0	140-150	COB3838W426480169140		120-130
Pure White	5000	70	/	150-160	COB3838W526480169150		130-140
		80	0	140-150	COB3838W526480169140		120-130

Notes:

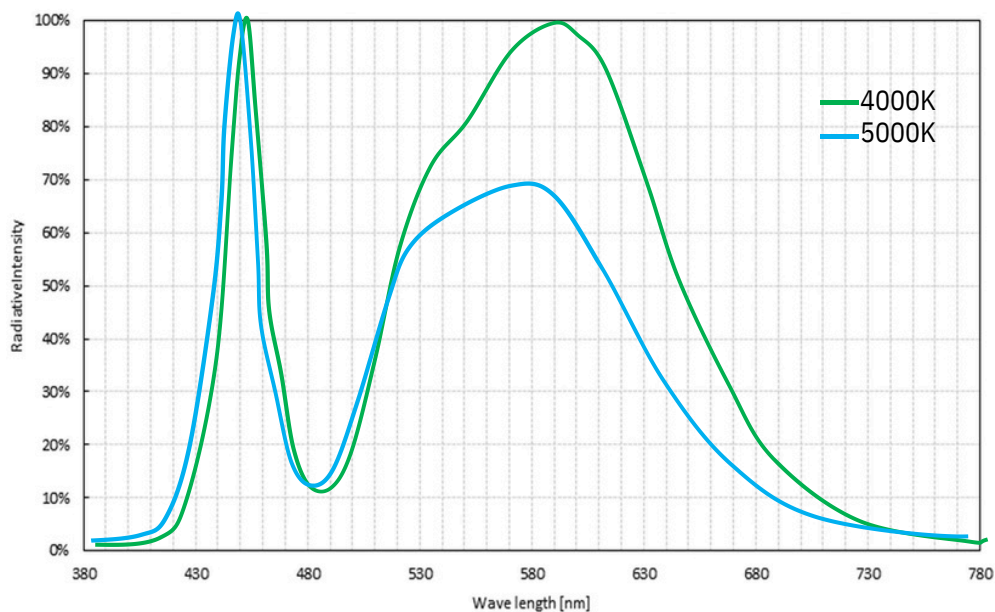
Above charts include the most regular specs for COB series for reference. Please consult sales representative for specs that are not listed or please visit www.getiangroup.com.

Machine Tolerance $\pm 3\%$ on luminous flux.

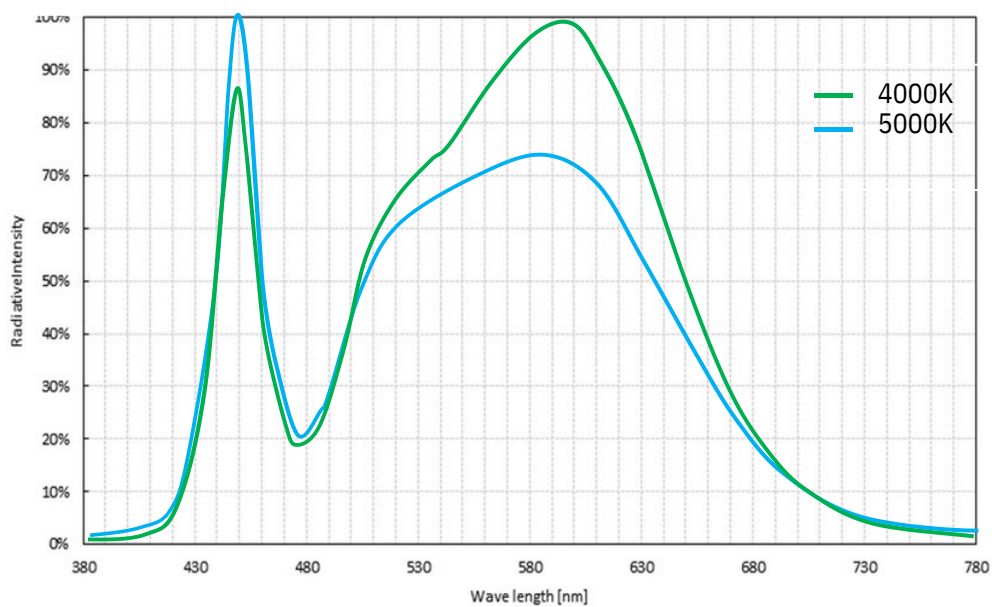


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CRI(Ra) 70Min
Spectral Features (Tc = 25°C)



CRI(Ra) 80Min

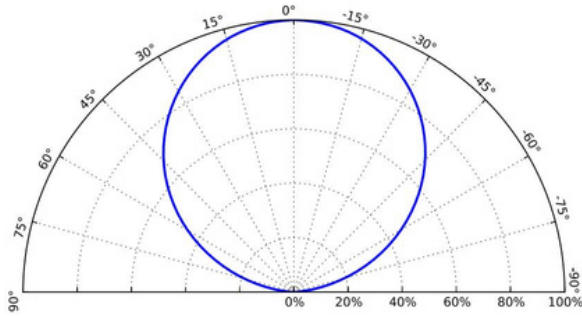




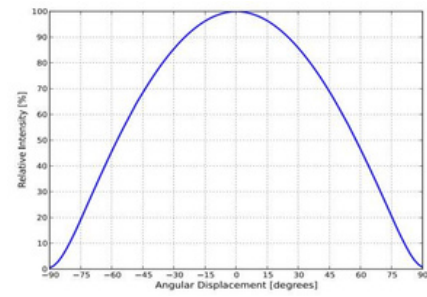
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Typical Spatial Distribution($T_c = 25^{\circ}\text{C}$)

Intensity Distribution Diagram

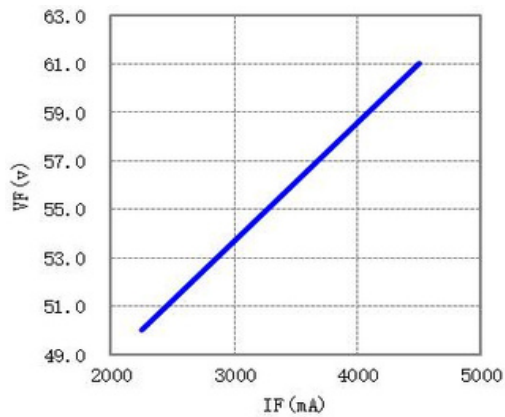


Intensity Distribution Curve

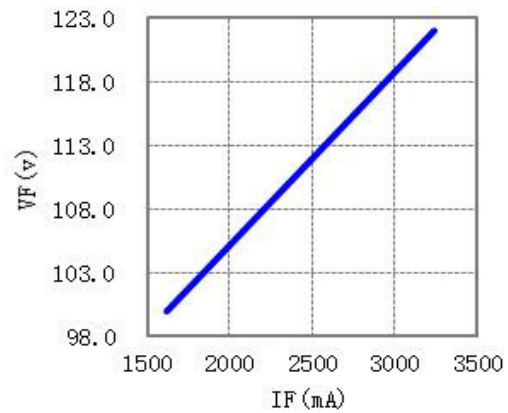


Electrical Features ($T_c = 25^{\circ}\text{C}$)

Standard Power: 117.4W

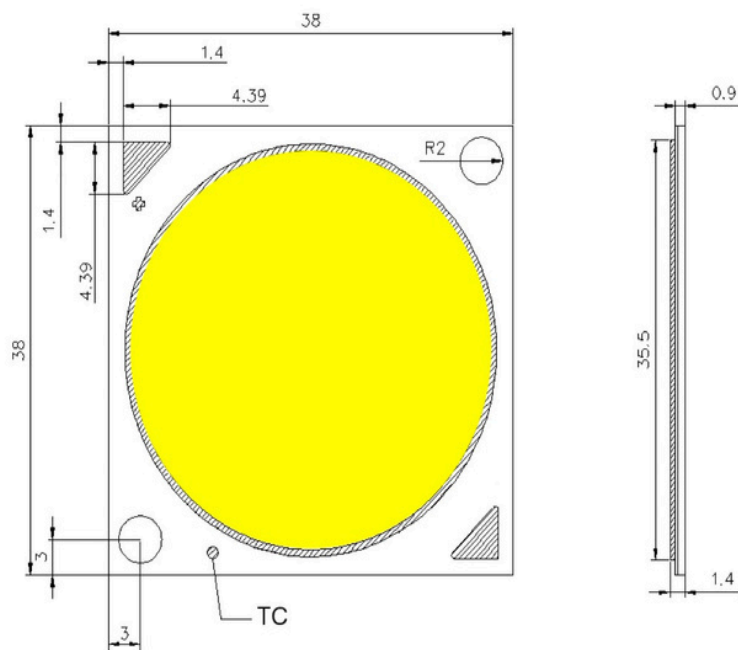


Standard Power: 169W





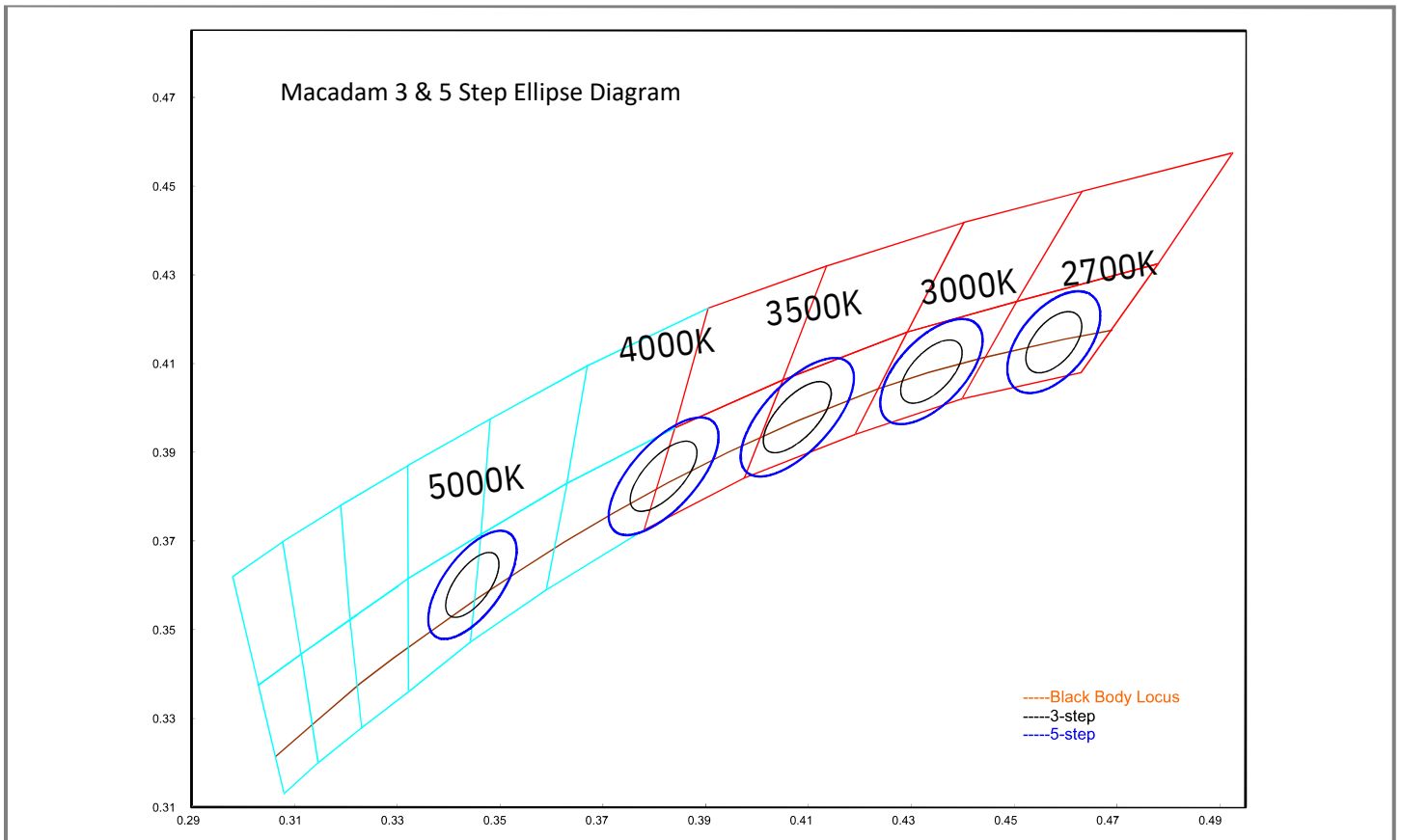
Tolerance+/-0.3mm





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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°



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Reliability Tests

Test Items	Test Conditions	
AgingTest	117.4W/IF=2250mA	169W/IF=1620mA Ta=25°C×1000hrs
AgingTest	117.4W/IF=2250mA	169W/IF=1620mA Ta=85°C×1000hrs
High Temperature Storage	100°C × 1000 hours	
Low Temperature Storage	-40°C × 1000 hours	
High Temp & Humidity	117.4W/IF=2250mA	169W/IF=1620mA 85°C,85%RHfor1000hours
TemperatureShock	-40°C×30minutes– +100°C×30minutes,100cycle	
ESD (HBM)	2000V HBM/Time	

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

Items	Symbol	Test Conditions		Criteria for Judging LED Failure
Forward Voltage	VF	117.4W/IF=2250mA	169W/IF=1620mA	>U × 1.1
Luminous Flux	φv	117.4W/IF=2250mA	169W/IF=1620mA	<S × 0.7

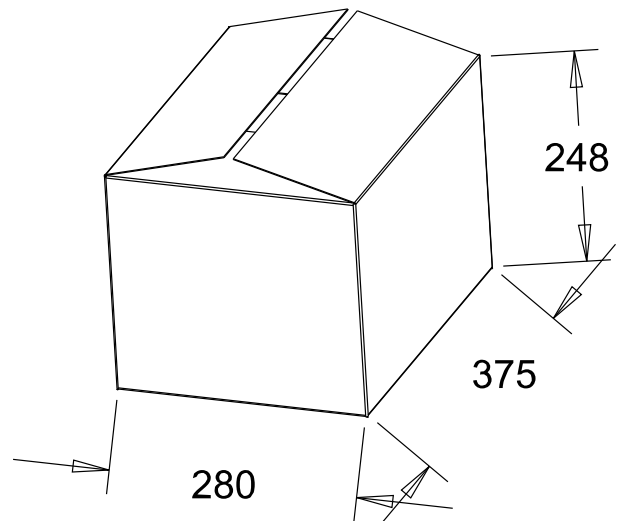
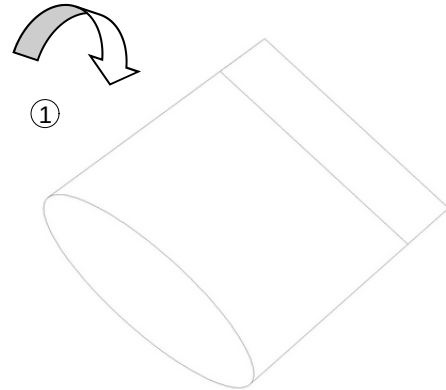
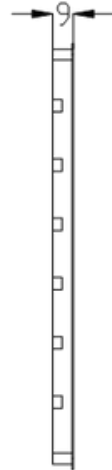
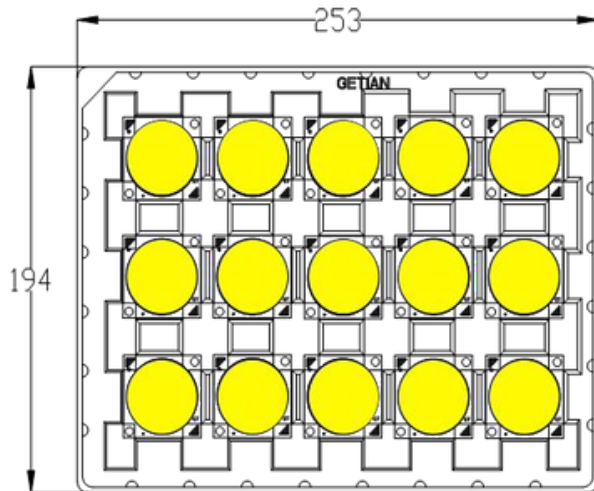
U refers to max value; S refers to initial value.

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



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Packaging (Unit:mm)



Standard packaging:

Tray:15pcs/tray

Aluminum Foil bag:135pcs/bag

Carton:810pcs/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.