

15W White High Power COB LED
Technical Data Sheet

Part No.: DL-COB15WXX

Double Light

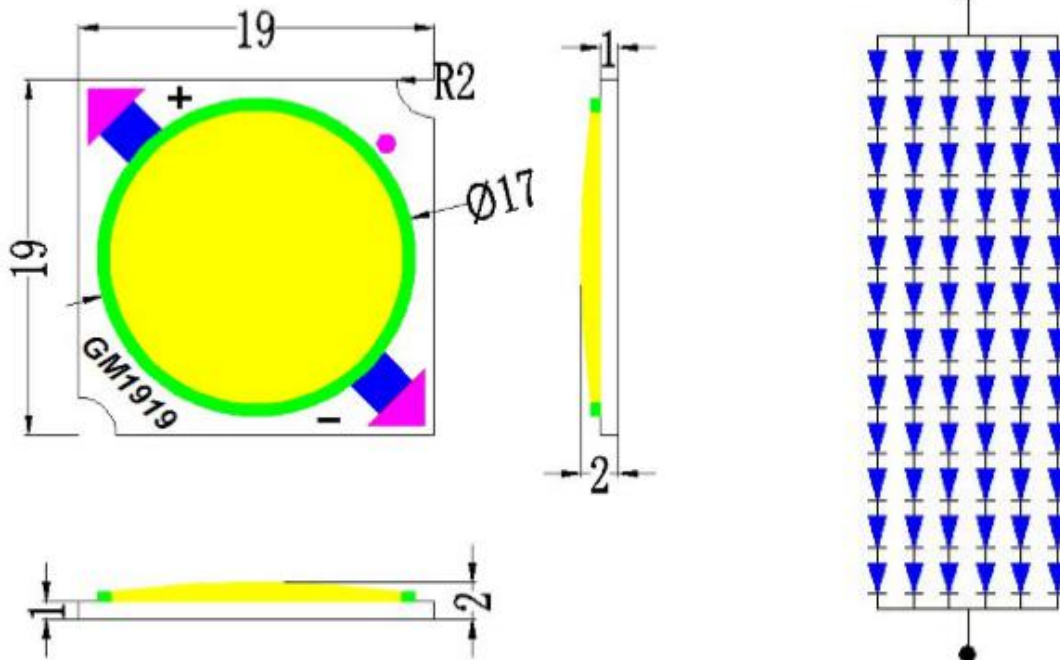
◆ Features

1. Long operating life
2. Highest flux
3. Wide range of colours:2500K-7000K
4. More energy efficient than incandescent and most halogen lamps
5. Low voltage DC operated
6. Instant light (less than 100ns)
7. Fully dimmable
8. No UV
9. Superior ESD protection
10. RoHS compliant

◆ Applications

1. Commercial lighting
2. Advertisement
3. Architectural lighting
4. Street lamps

◆ Dimensional drawing



Notes:

1. All dimensions are in millimeters.
2. Tolerance is $\pm 0.1\text{mm}$ unless otherwise noted.

Double Light

◆ Absolute maximum ratings (Ta=25°C)

Parameters	Symbol	Rating	Units
Power Dissipation	Pd	15	W
Forward Current	If	360	mA
Peak pulse Current	Ifp	600	mA
Reverse Voltage	Vr	5	V
Electrostatic Discharge	ESD	4500(HBM)	V
Operating Temperature	Topr	-40°C~+85°C	°C
Storage Temperature	Tstg	-40°C~+100°C	°C
Soldering temperature	Tsol	260±5°C(for 5sec)	°C
Manual Soldering Temperature	Tsol	350±20°C For 3 Seconds	°C

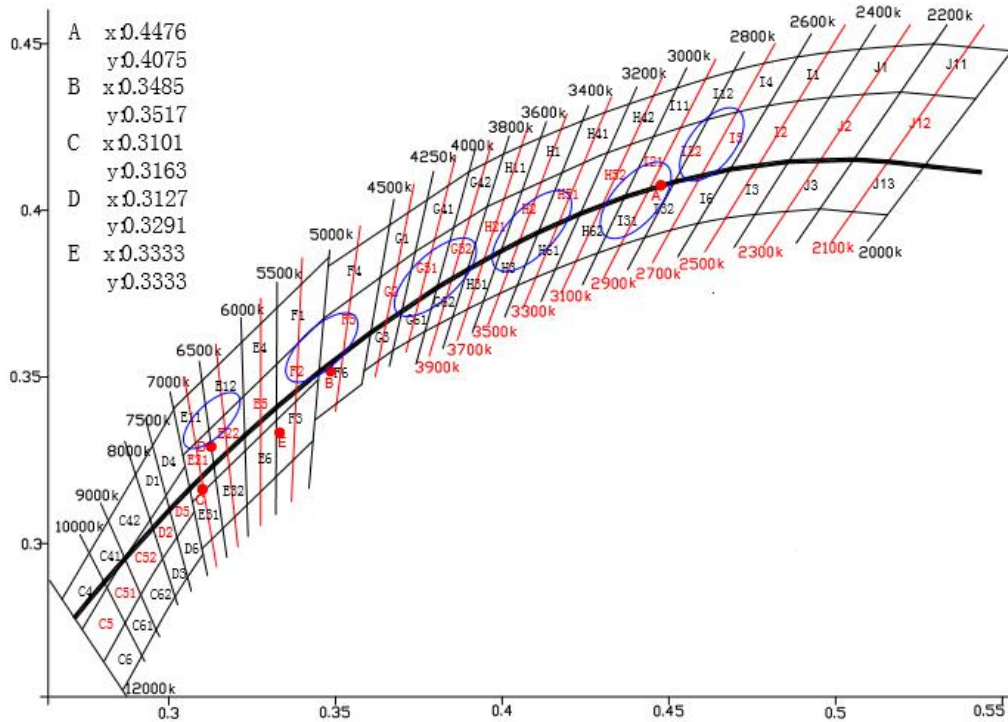
◆ Opto-Electrical Specification

Parameter	Symbol	Value			Unit	Tolerance	Test Conditions
		Min	Typ	Max			
Forward Voltage	Vf	36	38	40	V	± 0.5V	IF=360mA Test Temp=25°C
Luminous Flux	Φ	2500	---	10000	Lm	±5%	
50% Power Angle	2θ1/2		120		deg	±5	
Color Temperature	TC	2600	----	7000	k	±200k	
Color-rendering index	Ra	70	80			±3	
Reverse Current	IR	--	--	10	μA	±1μA	Vr=5V

冠指 光通量 色温	70	80	90
2600-2800	1400-1600	1300-1500	1100-1300
	1600-1800	1500-1700	1300-1500
2800-3200	1400-1600	1300-1500	1100-1300
	1600-1800	1500-1700	1300-1500
3400-3600	1400-1600	1300-1500	1100-1300
	1600-1800	1500-1700	1300-1500
3800-4200	1600-1800	1500-1700	1300-1500
	1800-2000	1700-1900	1500-1700
4500-5000	1600-1800	1500-1700	1300-1500
	1800-2000	1700-1900	1500-1700
5000-5500	1600-1800	1500-1700	1300-1500
	1800-2000	1700-1900	1500-1700
5500-7000	1600-1800	1500-1700	1300-1500
	1800-2000	1700-1900	1500-1700

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◆ CIE Chromaticity Diagram:



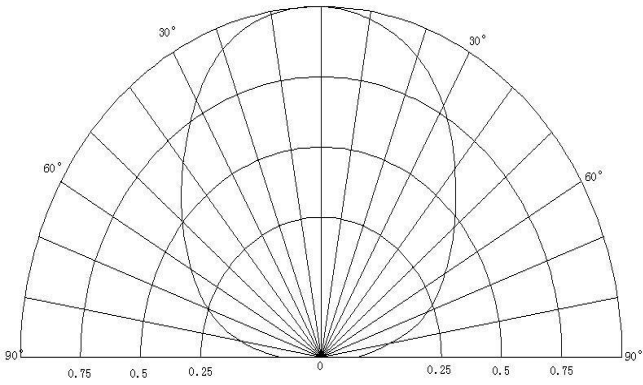
◆ Color Bin Limits

J12 2000-2200K	0.5195	0.4355	J2 2200-2400K	0.4981	0.4340	I2 2400-2600K	0.4798	0.4315
	0.5420	0.4335		0.5195	0.4355		0.4982	0.4340
	0.5267	0.4134		0.5055	0.4153		0.4859	0.4147
	0.5055	0.4153		0.4859	0.4147		0.4684	0.4123
I5 2600-2700K	0.4703	0.4295	I22 2700-2900K	0.4535	0.4249	I21 2900-3000K	0.4454	0.4222
	0.4789	0.4315		0.4703	0.4295		0.4535	0.4249
	0.4684	0.4123		0.4596	0.4104		0.4440	0.4061
	0.4596	0.4104		0.4440	0.4061		0.4367	0.4040
H52 3000-3200K	0.4316	0.4174	H51 3200-3400K	0.4179	0.4113	H2 3400-3600K	0.4060	0.4059
	0.4454	0.4222		0.4316	0.4174		0.4179	0.4113
	0.4367	0.4040		0.4233	0.3989		0.4108	0.3934
	0.4233	0.3989		0.4108	0.3934		0.3996	0.3878
H21 3600-3800K	0.3955	0.4012	G52 3800-4000K	0.3854	0.3949	G51 4000-4250K	0.3739	0.3877
	0.4060	0.4059		0.3955	0.4012		0.3854	0.3949
	0.3996	0.3878		0.3896	0.3822		0.3804	0.3768
	0.3896	0.3822		0.3804	0.3768		0.3699	0.3697
G2 4250-4500K	0.3635	0.3799	F5 4500-5000K	0.3464	0.3676	F2 5000-5500K	0.3324	0.3539
	0.3739	0.3877		0.3635	0.3799		0.3464	0.3676
	0.3699	0.3697		0.3606	0.3634		0.3448	0.3492
	0.3606	0.3634		0.3450	0.3515		0.3323	0.3370
E5 5500-6000K	0.3224	0.3442	E22 6000-6500K	0.3120	0.3341	E21 6500-7000K	0.3042	0.3265
	0.3324	0.3539		0.3224	0.3442		0.3120	0.3341
	0.3323	0.3370		0.3229	0.3279		0.3141	0.3193
	0.3229	0.3279		0.3141	0.3193		0.3071	0.3125
D5 7000-7500K	0.2991	0.3144	D2 7500-8000K	0.2944	0.3071	C52 8000-9000K	0.2868	0.2955
	0.3049	0.3232		0.2991	0.3144		0.2944	0.3071
	0.3077	0.3096		0.3025	0.3018		0.2981	0.2955
	0.3025	0.3018		0.2981	0.2955		0.2916	0.2846
C51 9000-10000K	0.2815	0.2868	C51 10000-12000K	0.2740	0.2742			
	0.2868	0.2955		0.2815	0.2868			
	0.2916	0.2846		0.2869	0.2761			
	0.2869	0.2761		0.2805	0.2645			

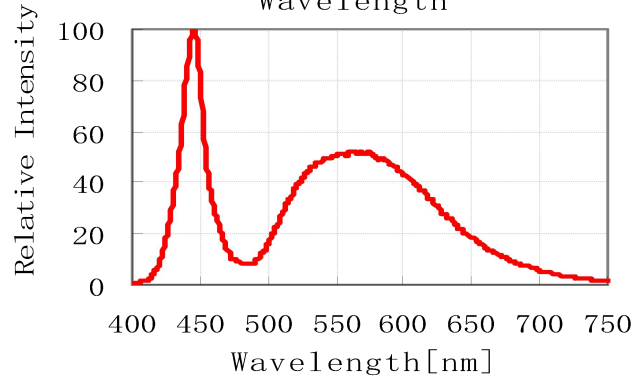
Double Light

◆ Opto-Electrical Characteristics

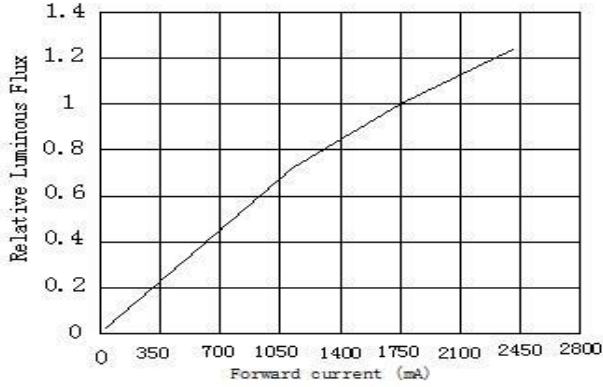
Diagram characteristics of radiation



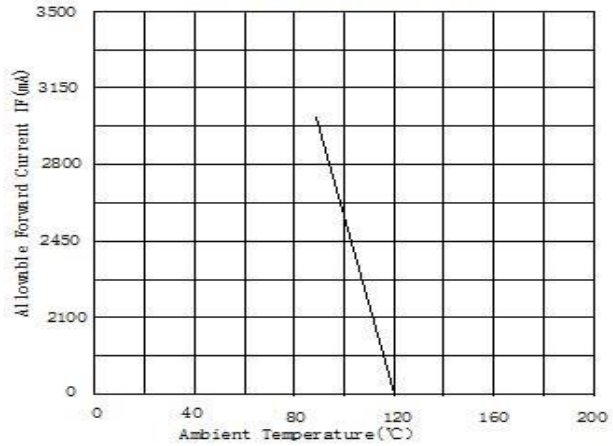
Relative Intensity vs. Wavelength



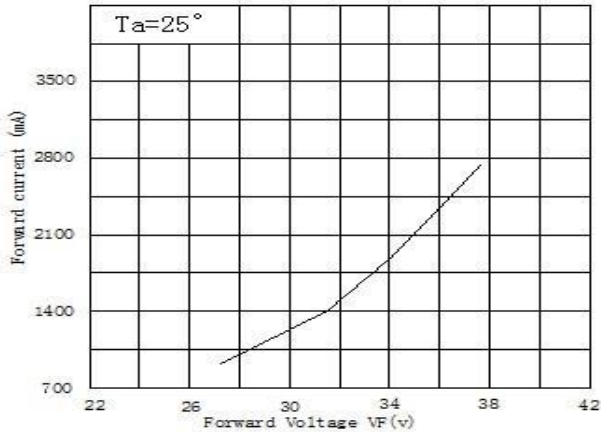
Relative Luminous Flux-IF



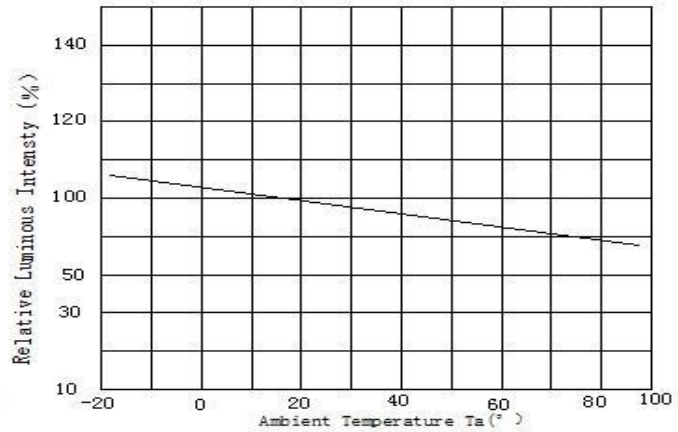
Allowable Forward Current -Ta



IF-VF



Relative Luminous Intensity -Ta



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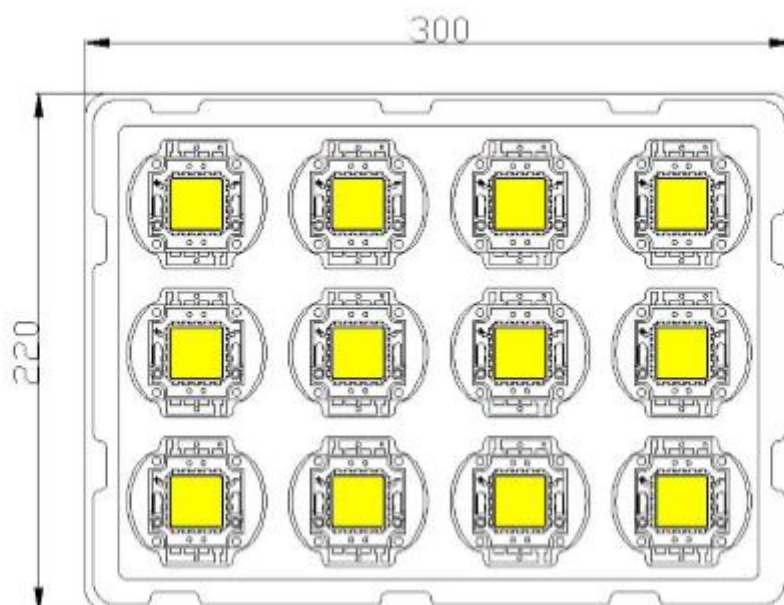
◆ Reliability Test Items

No.	Item	Condition	Time/Cycle	Number of Damaged
1	Soldering Heat Test	260±5°C	10 sec	0/20
2	Thermal Shock	-40°C(15sec)~100°C (15sec)	50 cycle	0/20
3	High Temp. Storage	100°C	168Hrs	0/20
4	Low Temp. Storage	-40°C	168Hrs	0/20
5	Temperature Cycle Test	-40°C ~ 80°C	50Cycles, 200Hrs	0/20
6	High Temp. High Humidity Test	80°C, 80% RH	168Hrs	0/20
7	Life Test	25°C , 3000mA	168Hrs	0/20

Judgment Criteria

No.	Item	Symbol	Test Conditions	Criteria
1	Leakage Current	Vf	If=3000mA	Δ%<10%
2	Forward Voltage	Ir	Vr=5V	<10uA
3	Luminous Flux	lm	If=3000mA	Δ%<20 %

◆ PackingStandard



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◆ Caution

1. Storage conditions

a) Before opening the package:

The LEDs should be kept at 30°C or less and 70%RH or less. The LEDs should be used within a year. When storing the LEDs, moisture proof packaging with absorbent material (silica gel) is recommended.

b) After opening the package:

The LEDs should be kept at 30°C or less and 60%RH or less. The LEDs should be soldered within 168 hours (7days) after opening the package.

If unused LEDs remain, they should be stored in moisture proof packages, such as sealed containers with packages of moisture absorbent material (silica gel).

2. Heat Generation

Thermal design of the end product is of paramount importance. Please consider the heat generation of the LED when making the system design. The coefficient of temperature increase per input electric power is affected by the thermal resistance of the circuit board and density of LED placement on the board as well as other components.

The operating current should be decided after considering the ambient maximum temperature of LEDs.

3. Cleaning

It is recommended that ethanol alcohol be used as a solvent for cleaning the LED's. when using other solvents, it should be confirmed beforehand whether the solvents will dissolve the package and the resin or not. Freon solvents should not be used to clean the LEDs because of worldwide regulations.

4. Static Electricity

Static electricity or surge voltage damages the LEDs.

It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs. All devices, equipments and machineries must be properly grounded. It is recommended that measures be taken against surge voltage to the equipment that mounts the LED's. When inspecting the final products in which LEDs were assembled. It is recommended to check. Whether the assembled LEDs are damaged by static electricity or not. It is easy to find Static-damaged LED's by a light -on test or a VF test at a lower current (below 20 mA is recommended). Damaged LEDs will show some unusual characteristics such as the leak current. Remarkably increases, the forward voltage becomes lower, or the LEDs do not light at the low Current.