15W RGB High Power COB LED
Technical Data Sheet

Part No.: DL-COB15WRGB-24V

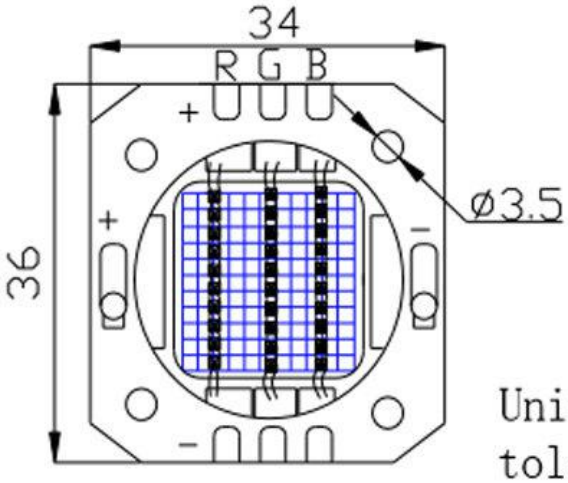
◆ **Features**

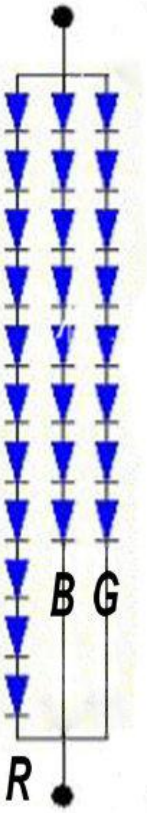
1. Very long operating life (up to100k hours).
2. Three chips (color) in one package.
3. Independent control of each color.
4. More energy efficient than incandescent and most halogen lamps.
5. Low voltage operated.
6. Instant light.
7. Long operating life.
8. IR reflow process compatible.
9. The product itself will remain within RoHS compliant Version

◆ **Applications**

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

◆ **Dimensional drawing**





Part No.	Chip Material		Lens Color	Source Color
DL-COB15WRGB-24V	R	AlGaInP	Water Clear	Hyper Red
	G	InGaN		Pure Green
	B	InGaN		Blue

Notes:

1. All dimensions are in millimeters.
2. Tolerance is ± 0.1mm unless otherwise noted.

◆ **Absolute maximum ratings（Ta=25°C）**

Parameters	Symbol	Rating	Units
Power Dissipation	Pd	15	W
Forward Current	If	350	mA
Peak pulse Current	Ifp	500	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	T_{SOL}	350±20°C For 3 Seconds	°C

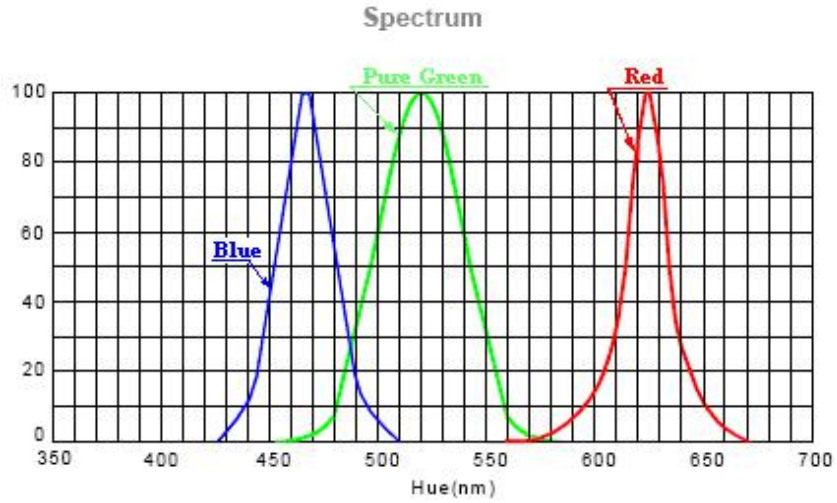
◆ **Opto-Electronical Specification**

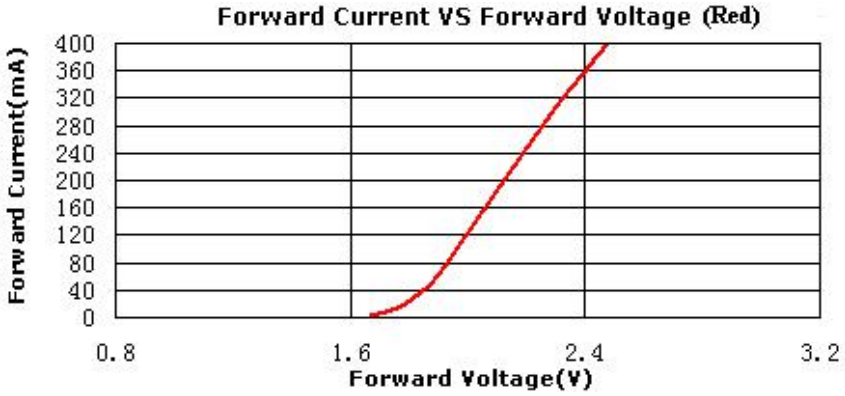
Parameters	Symbol	Emitting Color	Min.	Typ.	Max.	Unit	Test Condition
Luminous Flux	Φv	Hyper Red	300	380	---	lm	IF=350mA (Note 1)
		Pure Green	400	500	---		
		Blue	100	150	---		
Viewing Angle	$2\theta_{1/2}$	Hyper Red	---	120	---	Deg	IF=350mA
		Pure Green	---	120	---		
		Blue	---	120	---		
Peak Emission Wavelength	λp	Hyper Red	---	632	---	nm	IF=350mA
		Pure Green	---	520	---		
		Blue	---	468	---		
Dominant Wavelength	λd	Hyper Red	---	624	---	nm	IF=350mA
		pure Green	---	525	---		
		Blue	---	470	---		
Spectral Line Half-Width	Δλ	Hyper Red	---	20	---	nm	IF=350mA
		Pure Green	---	35	---		
		Blue	---	25	---		
Forward Voltage	VF	Hyper Red	---	24	---	V	IF=350mA
		Pure Green	---	24	---		
		Blue	---	24	---		
Reverse Current	IR	Hyper Red	---	---	10	μA	V_R=5V
		Pure Green			50		
		Blue			50		

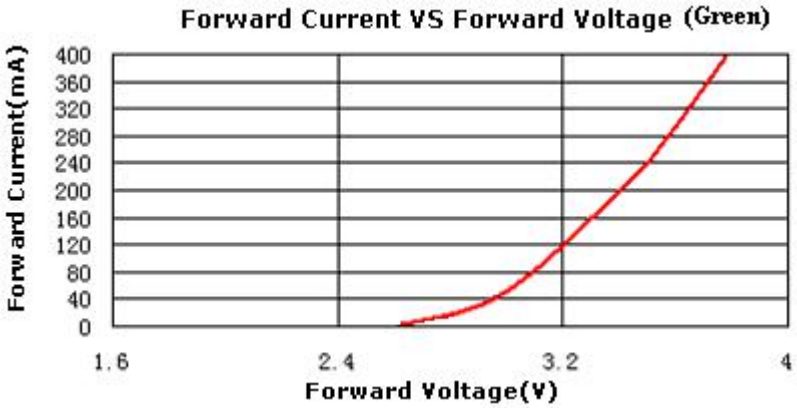
Notes:

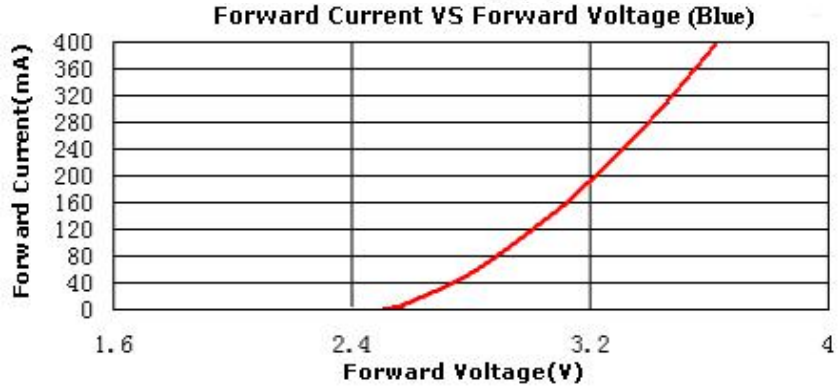
1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.

◆ **Opto-Electronical Characteristics**

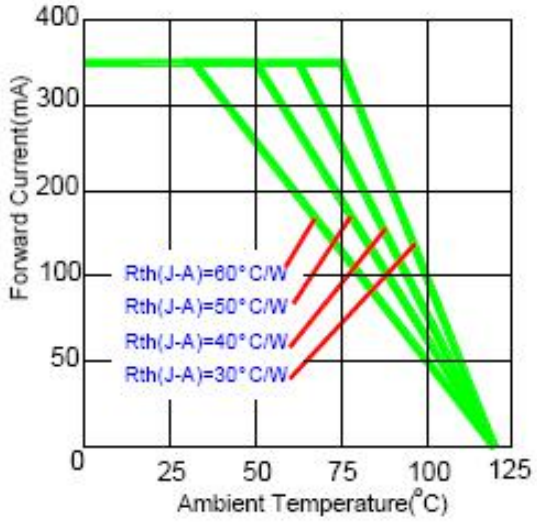




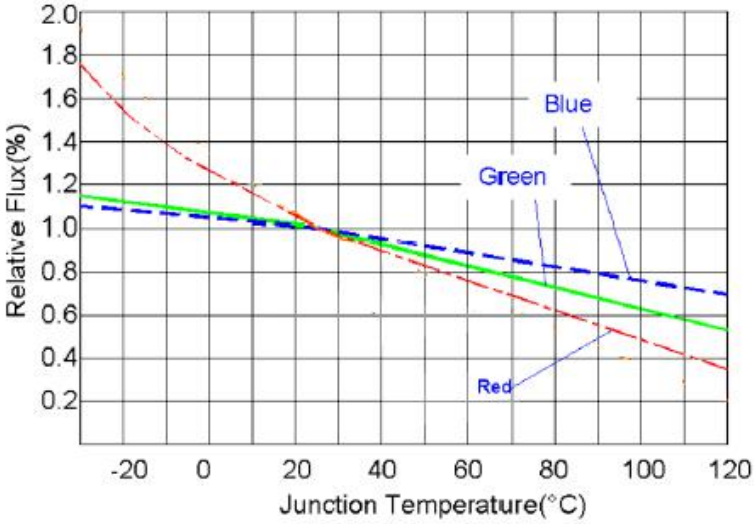


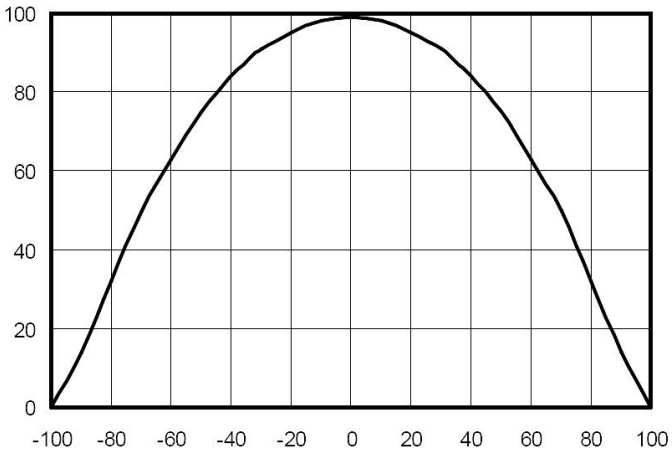


Operating Current & Ambient Temperature



Junction temperature & Relative Flux





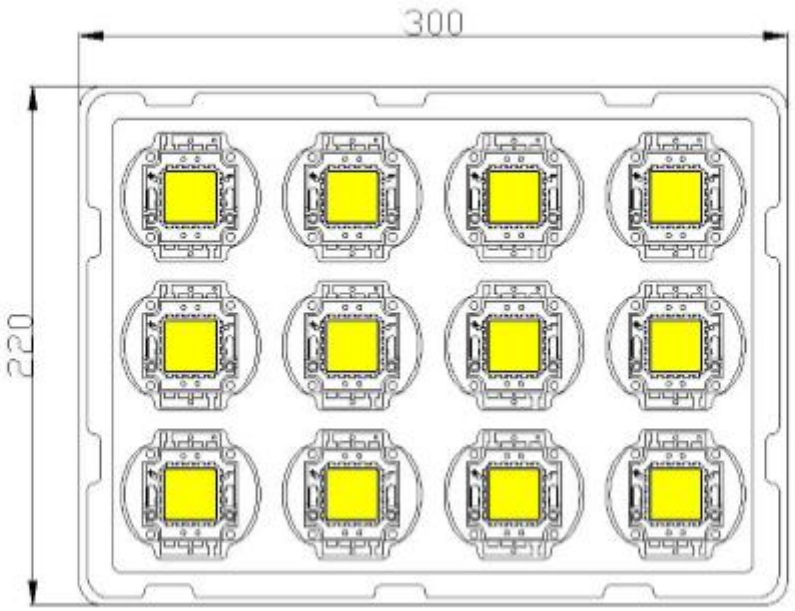
◆ **Reliability Test Items**

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**



◆ **Caution**

1. Storage conditions

a) Before opening the package:

The LEDs should be kept at 30℃ 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℃ 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.