

# SPECIFICATION

## FOR APPROVAL

Part No.

**Product Name:** 1W Power LED

Customer:

Customer Part No. SLQ1WXXXX-30

Date 2006/04/13

APPROVED SIGNATURES		
<b>Approved by</b>	<b>Checked by</b>	<b>Prepared by</b>

## Typical Applications:

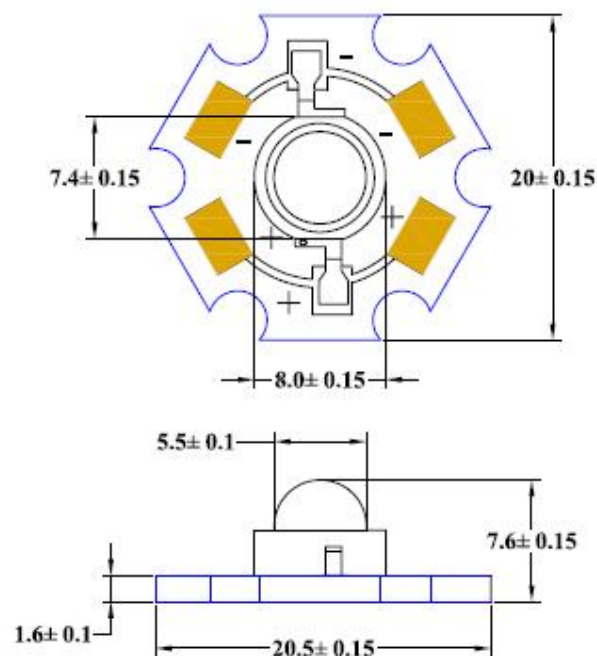
- \* Read lights(car,bus,aircraft)
- \* Portable (flashlight,bicycle)
- \* Decorative
- \* Sign and channel letter
- \* Appliance
- \* Lcd backlight
- \*Automotive Exterior(Stop-Trail-Turn)

## Features:

- \* High Flux per LED
  - \* Very long operating life (up to 100k hours)
  - \* Available in White,Green,Blue,Red-Orange and Red
  - \* Lambertian or Collimated Radiation Pattern
  - \* More Energy Efficient than incandescent and most Halogen lamps
  - \*Cool beam ,safe to the touch
  - \* Instant light (less than 100ns)
  - \*No UV
  - \*Superior ESD protection
  - \*Soldering methods:Ir reflow soldering and Hand soldering
-

---

## Mechanical Dimensions



## Notes:

- \* Slots in aluminum-core PCB for M3 or #4 mounting screw.
  - \* Electrical interconnection pads labeled on the aluminum-core PCB with "+" and "-" to denote positive and negative, respectively. All positive pads are interconnected, as are all negative pads, allowing for flexibility in array interconnection.
  - \* Drawing not to scale.
  - \* All dimensions are in millimeters.
-

## Part Number Matrix:

<b>Color</b>	<b>Part Number</b>	<b>Beam Pattern</b>
White	SLQ1WB 50-30	Lambertian
Green	SLQ1WVP50 -30	Lambertian
Blue	SLQ1WAZ15 -30	Lambertian
Red-Orange		Lambertian
Red	SLQ1WR45-30	Lambertian
Yellow	SLQ1WA 40-30	Lambertian

## Flux Characteristics at 350 mA, Junction Temperature, $T_j=25^\circ\text{C}$

<b>Color</b>	<b>Luminous Flux(lm)</b>		<b>Viewing Angle 2 <math>\theta</math>1/2 (degree)</b>
	<b>Minimum</b>	<b>Typical</b>	
White	40	50	30
Green	40	50	30
Blue	10	15	30
Red-Orange	35	45	30
Red	35	45	30
Yellow	30	40	30

## Optical Characteristics

at 350mA, Junction Temperature,  $T_j=25^\circ\text{C}$

Color	$\lambda_D(\text{nm})$ & CCT(K)			$\lambda_D(\text{nm})_{1/2}$
	Min.	Typ.	Max.	
White	5000K	5500K	15000k	-
Green	515	525	535	35
Blue	460	470	480	25
Red-Orange	612.5	617	620.5	20
Red	620.5	625	645	20
Yellow	585	591	595	20

Note: 1.Dominant Wavelength  $\lambda_D$   
 2.Color Temperature(CCT)  
 3.Spectral Half-width(nm)  $\lambda_{D1/2}$

### Absolute Maximum Ratings:

Parameter	White/Green/Blue	Amber/Red
DC Forward Current(mA)	350	380
Peak Pulsed Forward current(mA)	500	550
Average Forward Current (mA)	350	350
ESD Sensitivity	$\pm 16000\text{V HBM}$	
LED Junction Temperature( $^\circ\text{C}$ )	120	120
Aluminum-core PCB Temperature( $^\circ\text{C}$ )	100	100
Storage & Operating Temperature( $^\circ\text{C}$ )	-40 to +105	-40 to +105
Soldering Temperature( $^\circ\text{C}$ )	260 $^\circ\text{C}$ for 5 seconds Max.	

## Electrical Characteristics

at 350mA, Junction Temperature,  $T_j=25^\circ \text{C}$

Color	Forward Voltage Vf(V)		
	Min.	Typ.	Max.
White	2.80	3.4	3.99
Green	2.80	3.4	3.99
Blue	2.80	3.4	3.99
Red-Orange	1.90	2.40	3.10
Red	1.90	2.40	3.10
Yellow	1.90	2.40	3.10

Note: 1.Forward Voltage Vf(V)  
2.Spectral Half-width(nm)  $\lambda$  D1/2

## Photometric Luminous Flux Bin Structure

Bin Code	Min.Photometric Flux(lm)	Max.Photometric Flux(lm)
A	3.8	4.9
B	4.9	5.3
C	5.3	8.2
D	8.2	10.7
E	10.7	13.9
F	13.9	18.1
G	18.1	23.5
H	23.5	30.6
I	30.6	39.8
K	39.8	51.7
L	51.7	67.2

---

**Color Bins Yellow**

<b>Bin Code</b>	<b>Min. Dominant Wavelength(nm)</b>	<b>Max. Dominant Wavelength(nm)</b>
<b>a</b>	585	590
<b>b</b>	590	595

**Color Bins Red**

<b>Bin Code</b>	<b>Min. Dominant Wavelength(nm)</b>	<b>Max. Dominant Wavelength(nm)</b>
<b>a</b>	612.5	620.5
<b>b</b>	620.5	631
<b>c</b>	631	645

**Color Bins Blue**

<b>Bin Code</b>	<b>Min. Dominant Wavelength(nm)</b>	<b>Max. Dominant Wavelength(nm)</b>
<b>a</b>	460	465
<b>b</b>	465	470
<b>c</b>	470	475
<b>d</b>	475	480

**Color Bins Green**

<b>Bin Code</b>	<b>Min. Dominant Wavelength(nm)</b>	<b>Max. Dominant Wavelength(nm)</b>
<b>a</b>	515	520
<b>b</b>	520	525
<b>c</b>	525	530
<b>d</b>	530	535

---

**Forward Voltage Bins:**

<b>Bin Code</b>	<b>Min.Forward Voltage(V)</b>	<b>Max.Forward Voltage(V)</b>
<b>1</b>	<b>1.80</b>	<b>2.00</b>
<b>2</b>	<b>2.00</b>	<b>2.20</b>
<b>3</b>	<b>2.20</b>	<b>2.40</b>
<b>4</b>	<b>2.40</b>	<b>2.60</b>
<b>5</b>	<b>2.60</b>	<b>2.80</b>
<b>6</b>	<b>2.80</b>	<b>3.00</b>
<b>7</b>	<b>3.00</b>	<b>3.20</b>
<b>8</b>	<b>3.20</b>	<b>3.40</b>
<b>9</b>	<b>3.40</b>	<b>3.60</b>
<b>10</b>	<b>3.60</b>	<b>3.80</b>
<b>11</b>	<b>3.80</b>	<b>3.99</b>

**White Color Bins:**

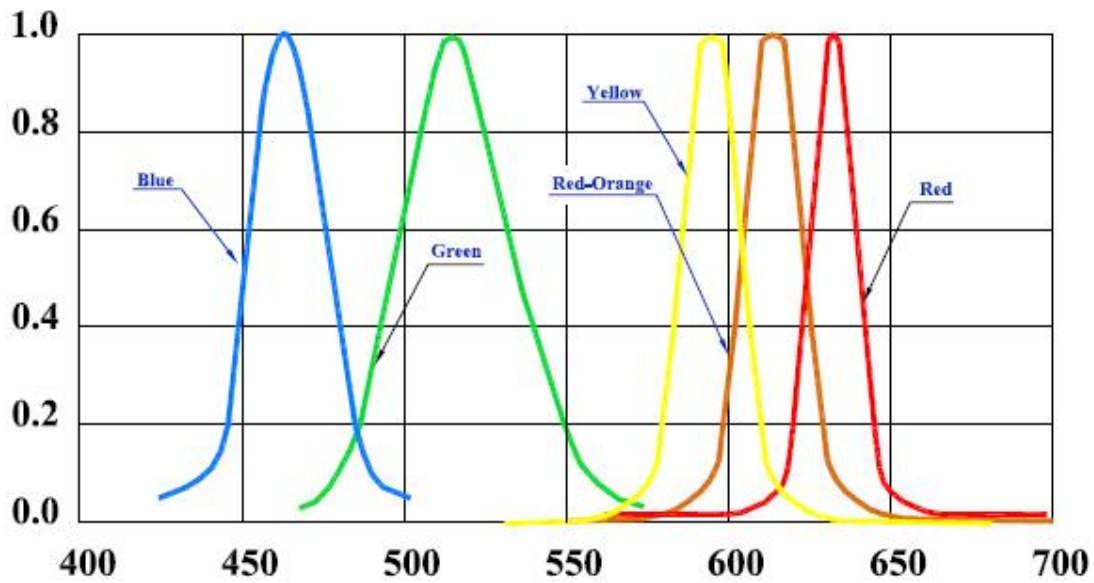
<b>Bin Code</b>	<b>Tempeter of Color (Tc)</b>
<b>B</b>	<b>8000K-15000K</b>
<b>W</b>	<b>5000K-8000K</b>
<b>Y</b>	<b>3000K-5000K</b>



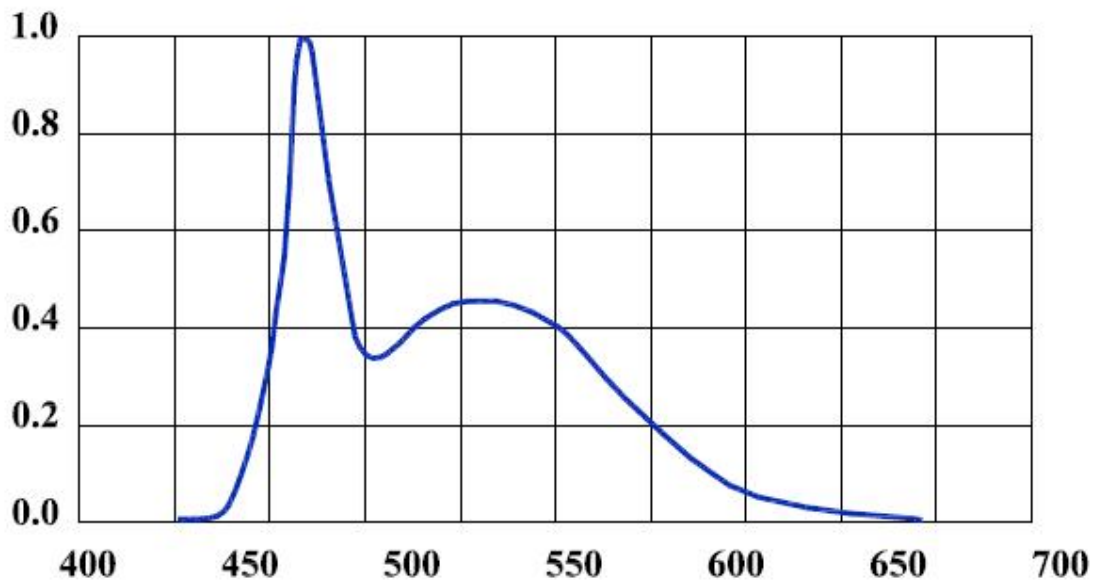
---

---

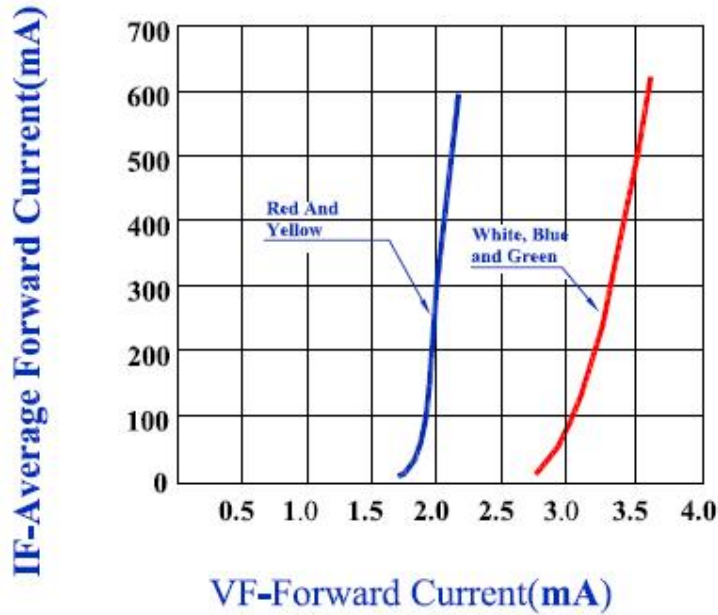
### Wavelength Characteristics, $T_j=25^\circ\text{C}$



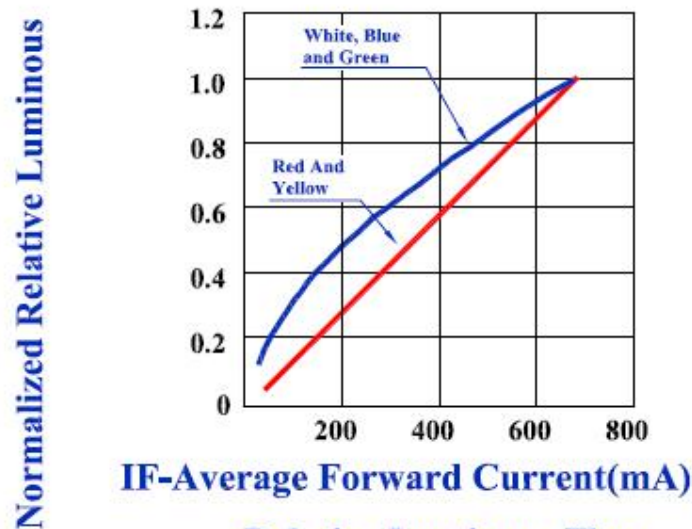
### White Color Spectrum



## Forward Current Characteristics, $T_j=25^\circ\text{C}$



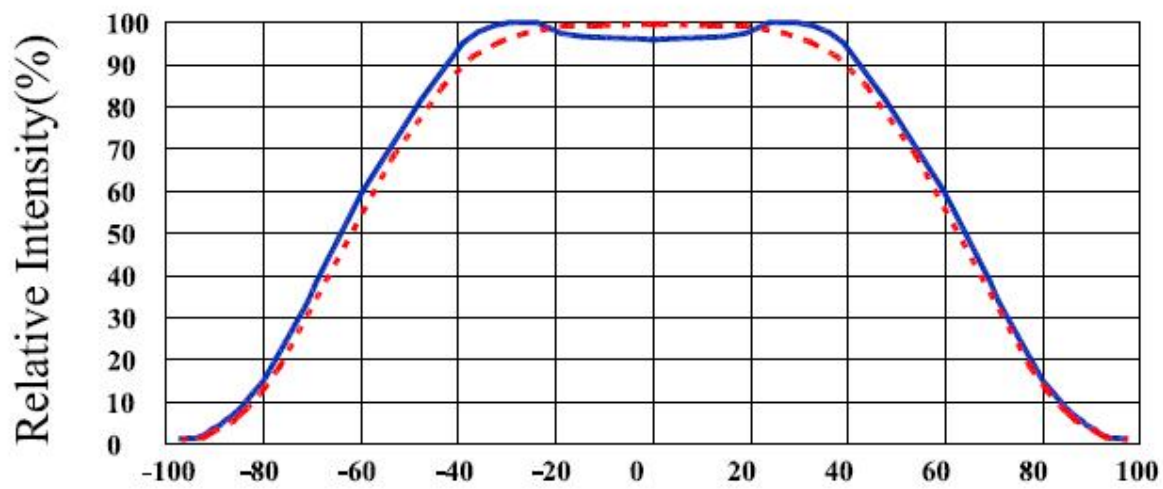
Forward Current VS. Forward Voltage for White,Blue ,Green,Red and Yellow.



Relative Luminous Flux vs. Forward Current for White,Blue,Green,Yellow,Red at  $T_j=25^\circ\text{C}$

## Typical Representative Spatial Radiation Pattern

Lambertian Radiation Pattern



Angular Displacement (Degree)  
Typical Representative Spatial Radiation Pattern  
for White ,Blue,Green,and Yellow,Red.

---