

**QT-Brightek PLCC Series**

**PLCC4 RGB Reverse Mount LED**

**Part No.: QBLP677R-RGB**

Product: QBLP677R-RGB	Date: November 12, 2020	Page 1 of 10
	Version# 2.0	



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## Introduction

### Feature:

- White Diffused lens
- Package in tape and reel
- Ultra bright PLCC4 RGB LED
- White face
- Common Anode
- InGaN technology for IB/IG
- AlInGaP technology for R
- Triangle die placement
- 120 degree viewing angle
- Reverse mountable

### Description:

This PLCC4 RGB LEDs have a height profile of 1.76mm. Combination of high brightness output and robust package, this LED is ideal for architecture lighting, status indication, and color mixing applications.

### Application:

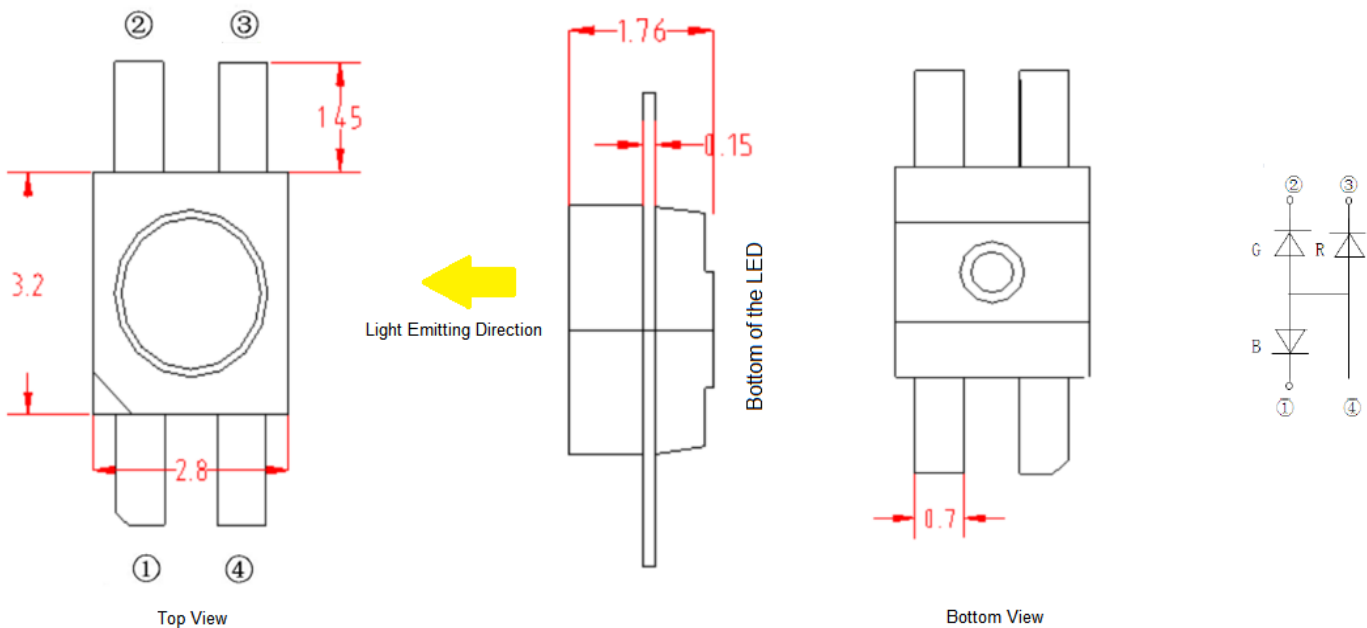
- Status indication
- Back lighting application
- Architecture lighting

### Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant



### Dimension:



### Electrical / Optical Characteristic (T<sub>A</sub>=25 °C)

Product	Color	I <sub>F</sub> (mA)	V <sub>F</sub> (V)		λ <sub>D</sub> (nm)			I <sub>V</sub> (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP677R-RGB	Red	20	2.0	2.7	615	620	630	490	700
	True Green	20	3.1	3.7	515	525	530	1400	2300
	Blue	20	3.1	3.7	460	470	475	290	460

### Absolute Maximum Rating

Material	P <sub>d</sub> (mW)	I <sub>F</sub> (mA)	I <sub>FP</sub> (mA)*	V <sub>R</sub> (V)	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)	T <sub>SOL</sub> (°C)**
AllInGaP (R)	75	30	100	5	-40 to +80	-40 to +85	260
InGaN (IB/IG)	111	30	100	5	-40 to +80	-40 to +85	260

\*Duty 1/10 @ 10kHz

\*\*IR Reflow for no more than 10 sec @ 260 °C

### Luminous Intensity I<sub>V</sub> for Red @ I<sub>F</sub>=20mA

Bin	Min.	Max.	Unit
25	490	640	mcd
26	640	830	
27	830	1080	

### Luminous Intensity I<sub>V</sub> for True Green @ I<sub>F</sub>=20mA

Bin	Min.	Max.	Unit
29	1400	1800	mcd
30	1800	2300	
31	2300	3000	
32	3000	3900	

### Luminous Intensity I<sub>V</sub> for Blue @ I<sub>F</sub>=20mA

Bin	Min.	Max.	Unit
23	290	380	mcd
24	380	490	
25	490	640	
26	640	830	

**Dominant Wavelength  $\lambda_D$  for Red @  $I_F=20\text{mA}$** 

Bin	Min.	Max.	Unit
A5	615	620	nm
R1	620	625	
R2	625	630	

**Dominant Wavelength  $\lambda_D$  for True Green @  $I_F=20\text{mA}$** 

Bin	Min.	Max.	Unit
TG1	515	520	nm
TG2	520	525	
TG3	525	530	

**Dominant Wavelength  $\lambda_D$  for Blue @  $I_F=20\text{mA}$** 

Bin	Min.	Max.	Unit
B5	460	465	nm
B6	465	470	
B7	470	475	

## Note:

Tolerance of measurement of forward voltage:  $\pm 0.1\text{V}$ Tolerance of measurement of luminous intensity:  $\pm 15\%$ Tolerance of measurement of dominant wavelength:  $\pm 2\text{nm}$

## Characteristic Curves

Figure 1. Relative Luminous Flux vs. Forward Current

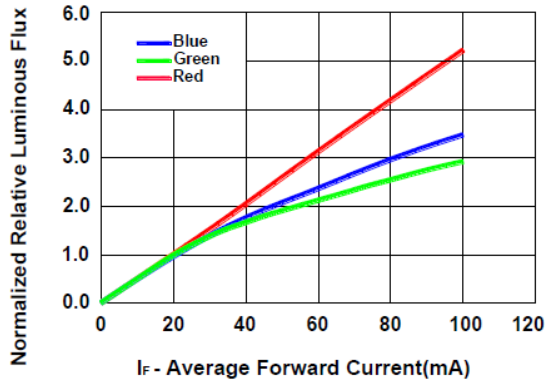


Figure 2. Forward Current VS. Forward Voltage

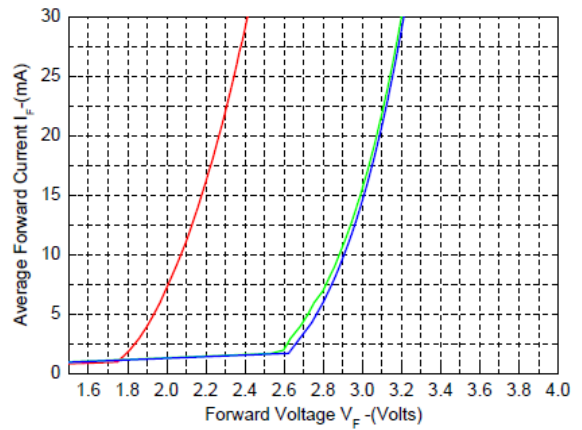
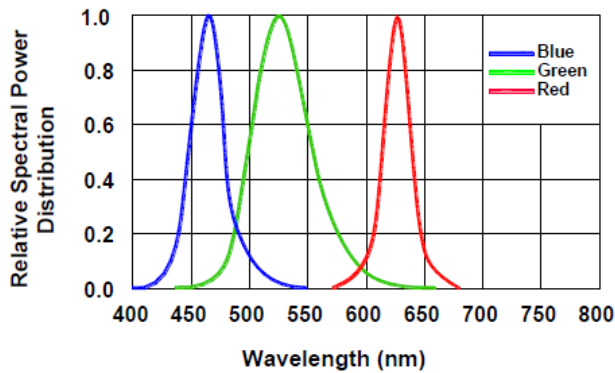
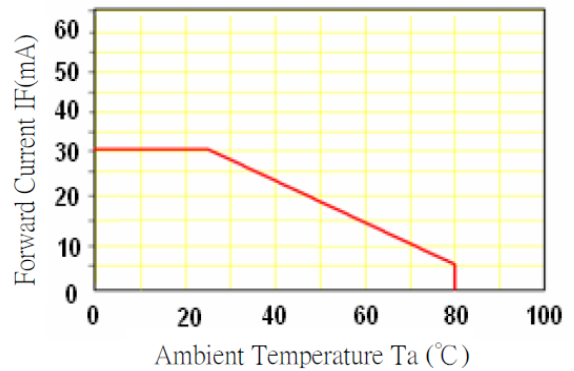


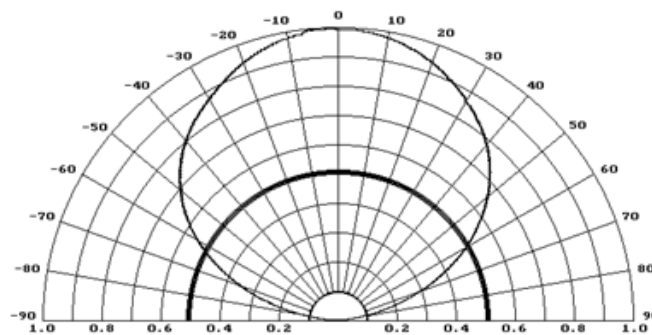
Figure 4. Relative Spectral Power Distribution vs. Wavelength



IF-Ta

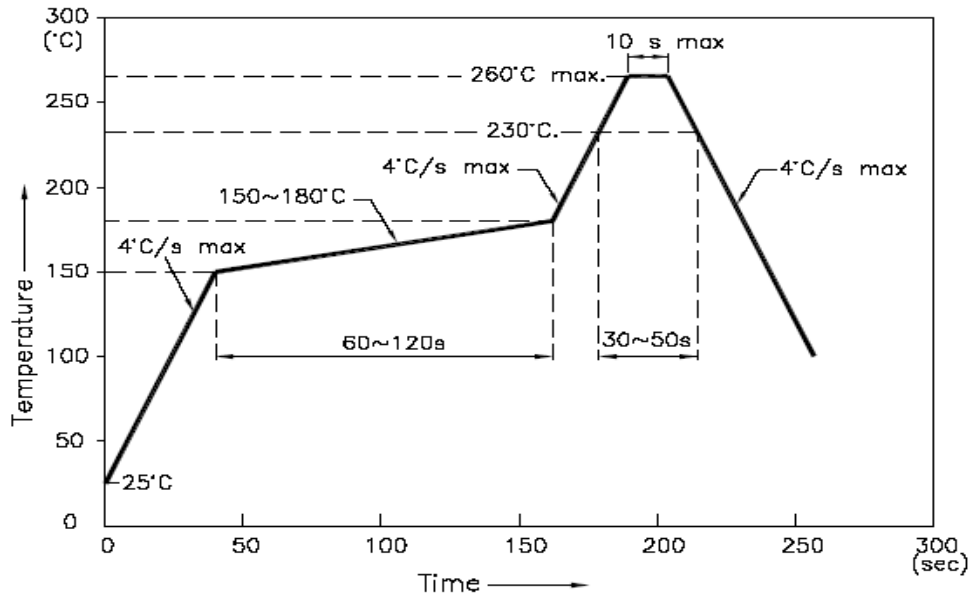


Directive Characteristics

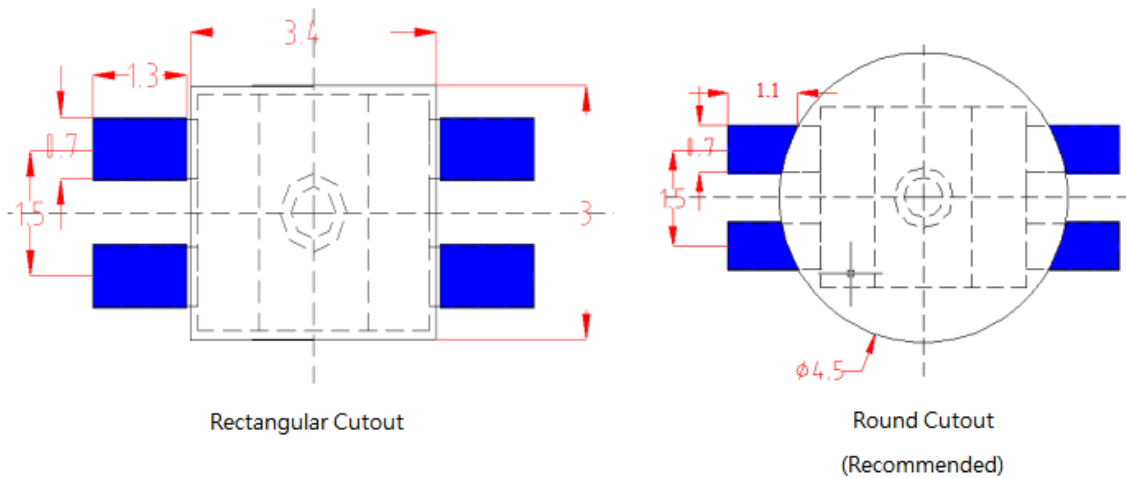


## Solder Profile & Footprint

- Recommended tin solder specifications: melting temperature in the range of 178~192 °C
- The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):



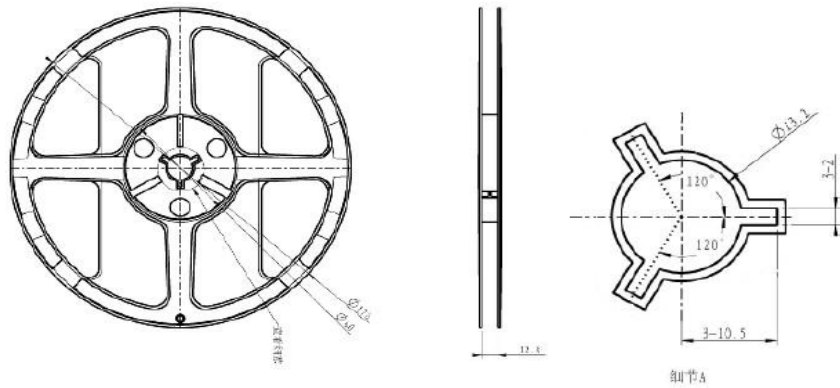
### Recommended Pad Layout and Hole Cutout



Units: mm

## Packing

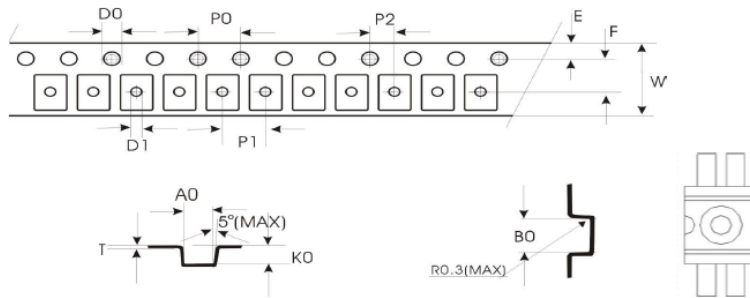
Reel Dimension:



Unit: mm

Tape Dimension:

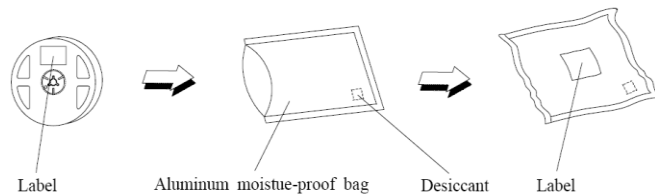
Tape Dimension



Symbol	A0	B0	K0	P0	P1	P2	T
Spec	3.10±0.1	6.45±0.05	2.15±0.05	4.0±0.1	4.0±0.1	2.00±0.05	0.23±0.03
Symbol	E	F	D0	D1	W	10P0	
Spec	1.75±0.10	5.5±0.05	1.5±0.1	1.5±0.1	12±0.1	40.0±0.2	

Unit: mm

Packaging Specifications:





## Labeling



Part No: \_\_\_\_\_

Customer P/N: \_\_\_\_\_

Item: \_\_\_\_\_

Q'ty: \_\_\_\_\_

Vf: \_\_\_\_\_

Iv: \_\_\_\_\_

WI: \_\_\_\_\_

Date: \_\_\_\_\_

**Made in China**

## Ordering Information

Part #	Orderable Part #	Spec Range	Quantity per reel
QBLP677R-RGB	QBLP677R-RGB	-	2,000 units

## Revision History

Description:	Revision #	Revision Date
New Release of QBLP677R-RGB	V1.0	06/09/2017
Correction on the Tape width	V1.1	05/23/2018
Updated recommended soldering pattern / add recommended hole cutout dimension / Add indication on the drawing	V1.2	02/12/2019
Updated dimension drawing	V2.0	11/12/2020

## Disclaimer

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1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.