

**QT-Brightek PLCC Series**

**PLCC4 LED**

**Part No.: QBLP1515-XX5 Series**

Product: QBLP1515-XX5_series	Date: December 11, 2017	Page 1 of 11
	Version# 1.2	

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## Introduction

**Feature:**

- Package in tape and reel
- Ultra bright reflector type PLCC4 LED
- InGaN technology for IB/IG
- AlInGaP technology for R/AG/Y/O
- 120 degree viewing angle

**Description:**

These ultra bright reflector type PLCC4 LEDs have a height profile of 1.00mm. Combination of high brightness output and robust package, these LEDs are ideal for architecture lighting, status indication, and industrial equipment lighting applications.

**Application:**

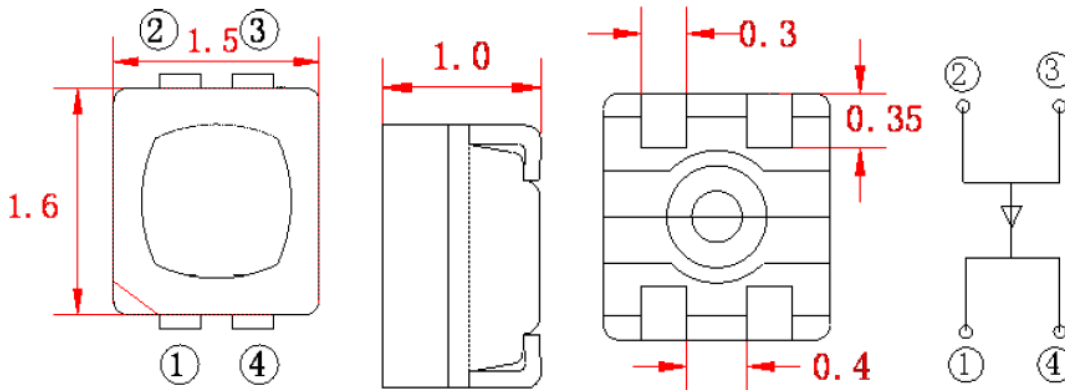
- Status indication
- Industrial equipment backlighting
- Architecture lighting

**Certification & Compliance:**

- TS16949
- ISO9001
- RoHS Compliant



**Dimension:**



Units: mm / tolerance = +/-0.2mm

**Electrical / Optical Characteristic (Ta=25 °C)**

Product	Color	I <sub>F</sub> (mA)	V <sub>F</sub> (V)		λ <sub>D</sub> (nm) / λ <sub>P</sub> (nm) for UV			I <sub>V</sub> (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP1515-IB5	Blue	5	3.1	3.4	460	465	470	45	100
QBLP1515-IG5	True Green	5	3.1	3.4	515	520	530	290	400
QBLP1515-R5	Red	5	1.9	2.5	620	625	630	16	45
QBLP1515-AG5	Yellow Green	5	1.9	2.5	565	570	575	16	30
QBLP1515-Y5	Yellow	5	1.9	2.5	585	590	595	16	30
QBLP1515-O5	Orange	5	1.9	2.5	595	603	610	27	50

**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)**
InGaN (IB/IG)	55	15	60	5	-30 ~ +85	-40 ~ +85	260
AllnGaP (R/AG/Y/O)	32	15	50	5	-30 ~ +85	-40 ~ +85	260

\*Duty 1/8 @ 1KHz

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

**Forward Voltage V<sub>F</sub> for AllnGaP @ I<sub>F</sub>=5mA**

Bin	Min.	Max.	Unit
□	1.5	2.5	V

**Forward Voltage V<sub>F</sub> for InGaN @ I<sub>F</sub>=5mA**

Bin	Min.	Max.	Unit
e	2.5	2.8	V
f	2.8	3.1	
g	3.1	3.4	

**Dominant Wavelength λ<sub>D</sub> for Blue @ I<sub>F</sub>=5mA**

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

**Dominant Wavelength λ<sub>D</sub> for Green @ I<sub>F</sub>=5mA**

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

**Dominant Wavelength  $\lambda_D$  for Red @  $I_F=5mA$** 

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

**Dominant Wavelength  $\lambda_D$  for Yellow Green @  $I_F=5mA$** 

Bin	Min.	Max.	Unit
Y1	565	570	nm
Y2	570	575	

**Dominant Wavelength  $\lambda_D$  for Yellow @  $I_F=5mA$** 

Bin	Min.	Max.	Unit
Y5	585	590	nm
Y6	590	595	

**Dominant Wavelength  $\lambda_D$  for Orange @  $I_F=5mA$** 

Bin	Min.	Max.	Unit
A1	595	600	nm
A2	600	605	
A3	605	610	

**Luminous Intensity  $I_V$  @  $I_F=5mA$** 

Bin	Min.	Max.	Unit
16	16	27	mcd
17	27	45	
18	45	77	
19	77	130	
20	130	170	
21	170	230	
22	230	290	
23	290	380	
24	380	490	
25	490	640	

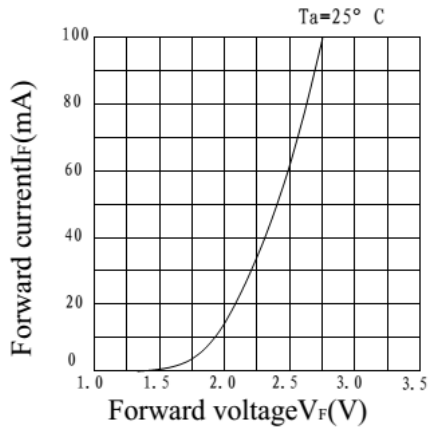
## Note:

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

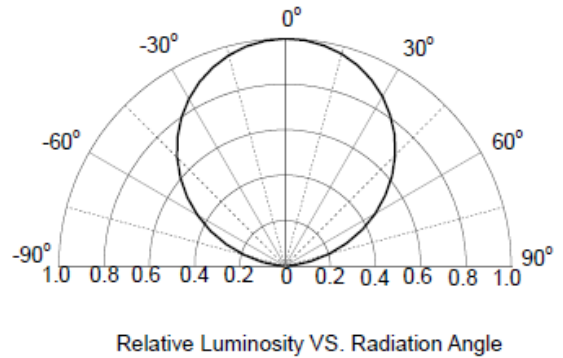
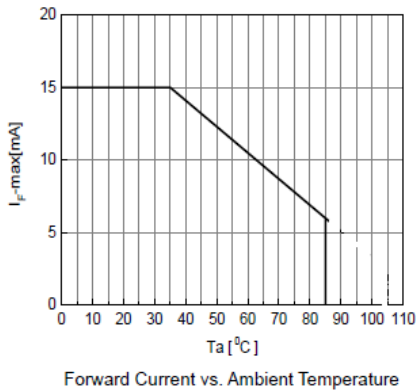
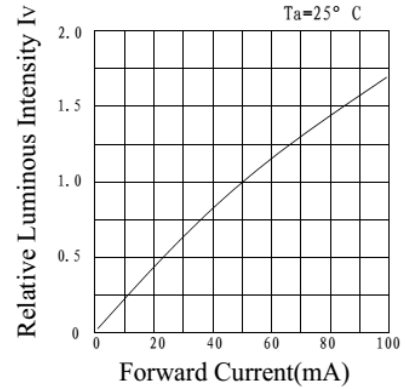
## Characteristic Curves

AllnGaP( R/AG/Y/O/S)

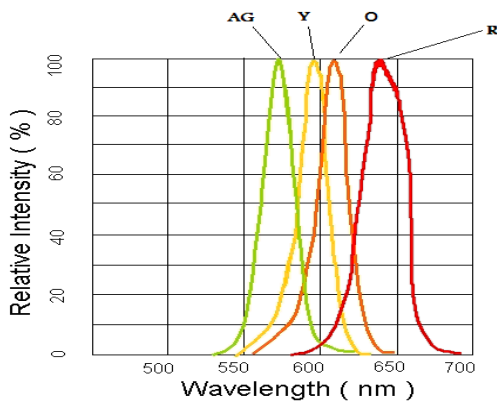
FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

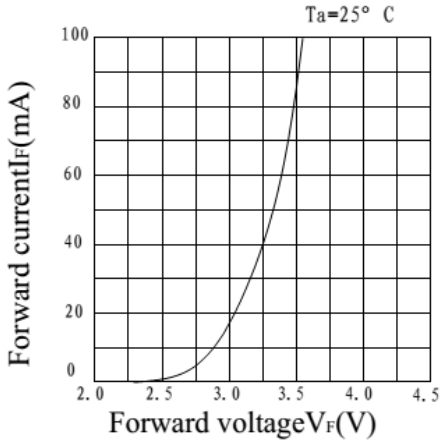


Relative Intensity vs. Wavelength

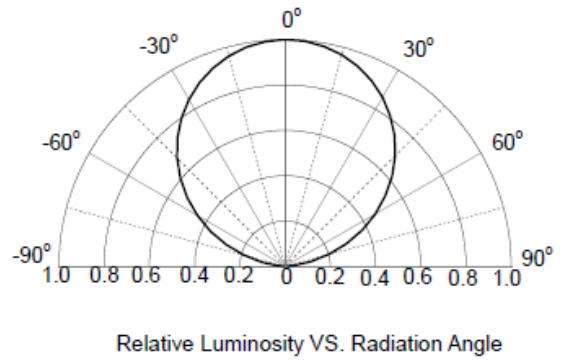
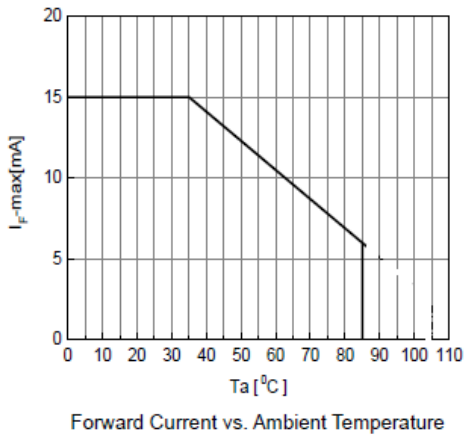
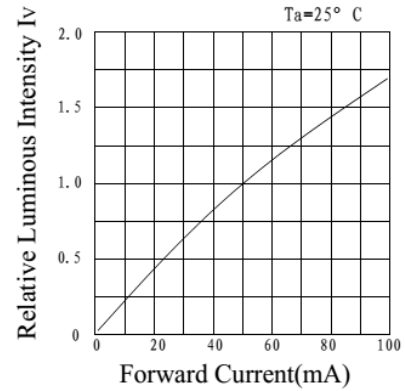


InGaN (IB/IG/UV)

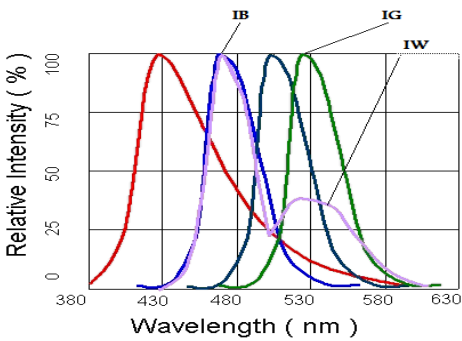
FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

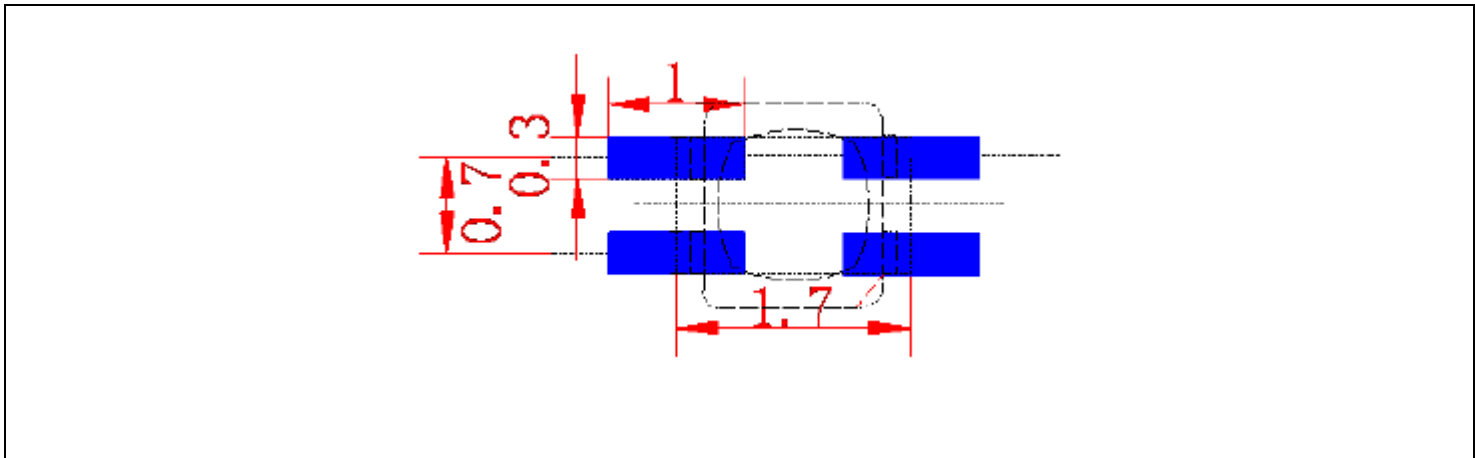
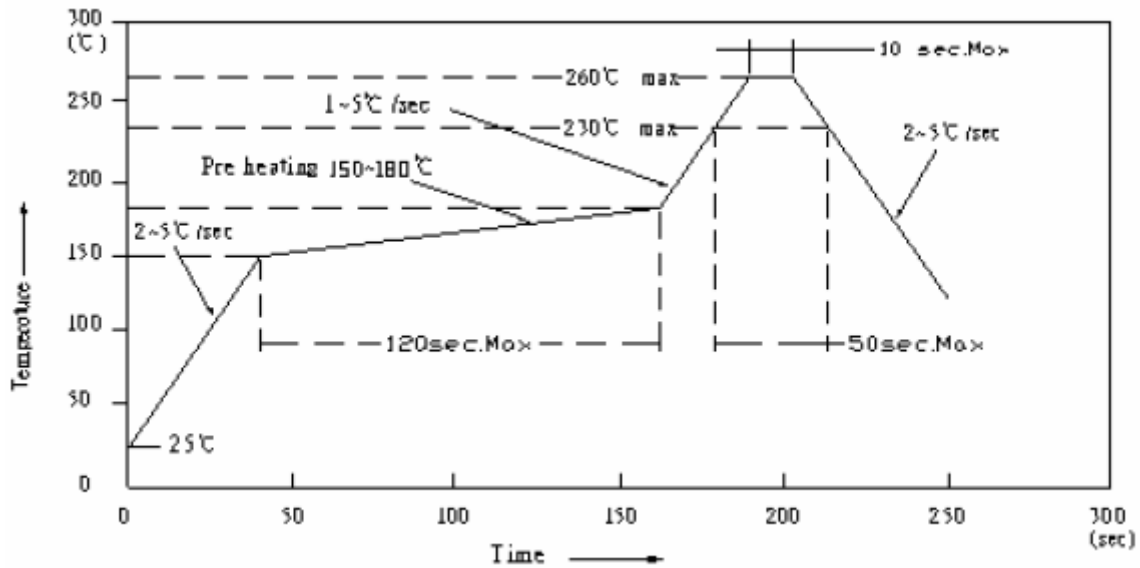


Relative Intensity vs. Wavelength



### 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):



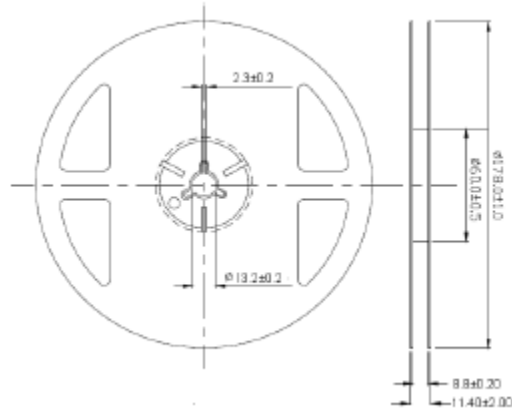
Units: mm

tolerance: +/- 0.2mm



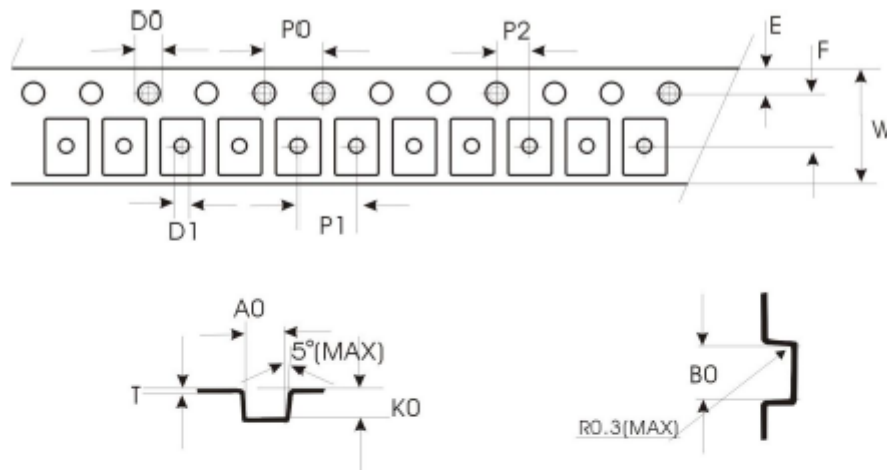
## Packing

Reel Dimension:



Unit: mm

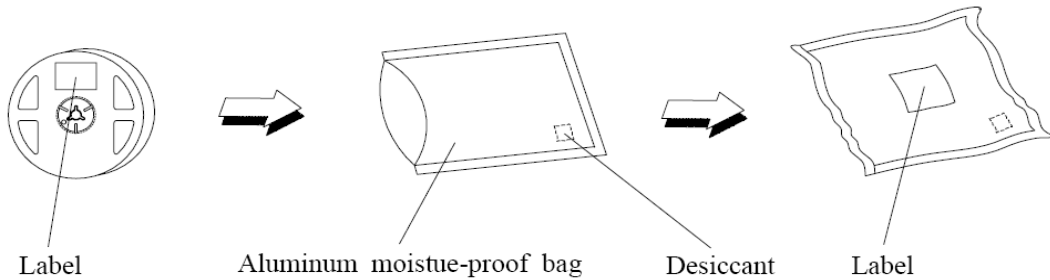
Tape Dimension:



Symbol	A0	B0	K0	P0	P1	P2	T
Spec	1.8±0.1	1.85±0.1	1.2±0.1	4.0±0.1	4.0±0.1	2.00±0.1	0.25±0.05
Symbol	E	F	D0	D1	W	P0	
Spec	1.75±0.10	3.50±0.05	1.5±0.1	1.0±0.1	8.0±0.1	40.0±0.2	

Unit: mm

Packaging Specification:



**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
QBLP1515-IB5	QBLP1515-IB5	Iv=100mcd typ. @ 5mA/ $\lambda_D=460\text{nm to }470\text{nm}$	3,500 units
QBLP1515-IG5	QBLP1515-IG5	Iv=400mcd typ. @ 5mA/ $\lambda_D =515\text{nm to }530\text{nm}$	3,500 units
QBLP1515-R5	QBLP1515-R5	Iv=45mcd typ. @ 5mA/ $\lambda_D=620\text{nm to }630\text{nm}$	3,500 units
QBLP1515-AG5	QBLP1515-AG5	Iv=30mcd typ. @ 5mA/ $\lambda_D= 565\text{nm to }575\text{nm}$	3,500 units
QBLP1515-Y5	QBLP1515-Y5	Iv=30mcd typ. @ 5mA/ $\lambda_D=585\text{nm to }595\text{nm}$	3,500 units
QBLP1515-O5	QBLP1515-O5	Iv=50mcd typ. @ 5mA/ $\lambda_D= 595\text{nm to }610\text{nm}$	3,500 units

**Revision History**

Description:	Revision #	Revision Date
New Release of QBLP1515-XX5_series	V1.0	11/17/2015
Amend Green WLD	V1.1	05/05/2016
Update packing spec to 3500pcs per reel	V1.2	12/11/2017

**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.