



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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**QT-Brightek PLCC Series**

**3020 White LED**

**Part No.: QBLP676-IW-XX**

**XX = WW/NW/CW**

Product: QBLP676-IW-XX	Date: April 14, 2017	Page 1 of 10
	Version# 3.0	

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## Introduction

**Feature:**

- Package in tape and reel
- Ultra bright reflector type 3020 PLCC 2 LED
- InGaN technology for IW
- 120 degree viewing angle
- CRI 80 typ.

**Description:**

This ultra-bright 3020 LED has a height profile of 1.30mm. Combination of high brightness output and robust package, this LED is ideal for back lighting, architecture lighting, and industrial equipment lighting applications.

**Application:**

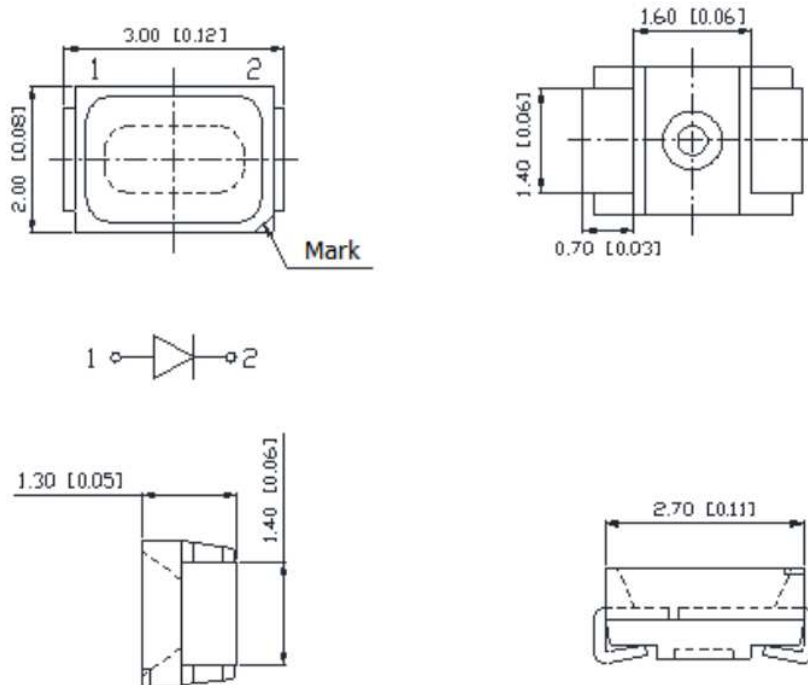
- Status indication
- Industrial equipment backlighting
- Architecture lighting

**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)		CCT (K)			I <sub>V</sub> (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP676-IW-WW	Warm White	20	3.0	3.4	2760	3000	3260	1600	1950
QBLP676-IW-NW	Natural White	20	3.0	3.4	3640	4000	4240	1600	2000
QBLP676-IW-CW	Cool White	20	3.0	3.4	5300	6020	7050	1600	2000

### 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	75	30	100	5	-40 ~ +85	-40 ~ +100	260

\*Duty 1/10 @ 1KHz

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

### Forward Voltage V<sub>F</sub> @ I<sub>F</sub>=20mA

Bin	Min.	Max.	Unit
G	2.6	2.8	V
H	2.8	3.0	
J	3.0	3.2	
K	3.2	3.4	

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

Bin	Min.	Max.	Unit
L1	1600	1950	mcd
L2	1950	2400	
L3	2400	2880	
L4	2880	3450	
L5	3450	4150	

Note:

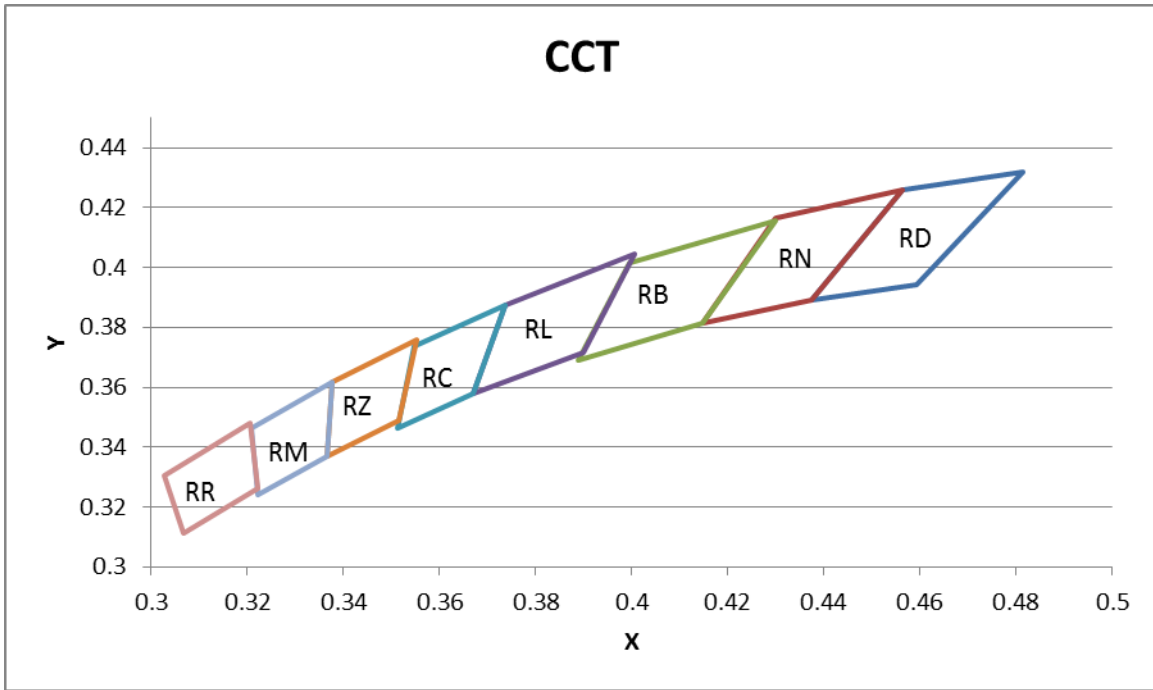
Tolerance of measurement of forward voltage: ±0.1V

Tolerance of measurement of luminous intensity: ±15%

### Correlated Color Temperature (CCT) @ I<sub>F</sub>=20mA

P/N	Bin	Min.	Max.	Unit
QBLP676-IW-WW	RN	2760	3260	K
QBLP676-IW-NW	RL	3640	4240	
QBLP676-IW-CW	RM	5300	6020	
	RR	6020	7050	

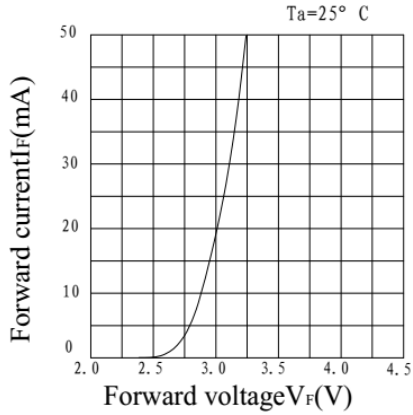
## Correlated Color Temperature



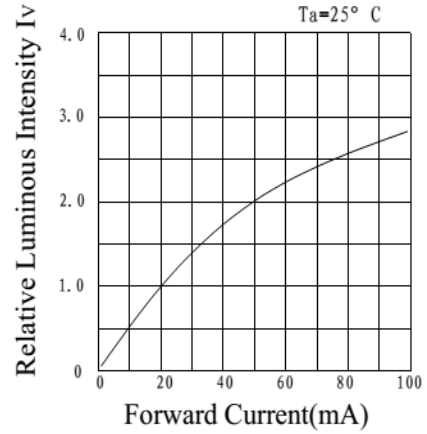
Color Ranks @ I <sub>F</sub> =20mA							
QBLP676-IW-WW				QBLP676-IW-NW			
RD		RN		RB		RL	
0.4813	0.4319	0.4562	0.426	0.4299	0.4156	0.4006	0.4044
0.4562	0.426	0.4299	0.4165	0.3996	0.4015	0.3736	0.3874
0.4373	0.3893	0.4147	0.3814	0.3889	0.369	0.367	0.3578
0.4593	0.3944	0.4373	0.3893	0.4147	0.3814	0.3898	0.3716
0.4813	0.4319	0.4562	0.426	0.4299	0.4156	0.4006	0.4044
QBLP676-IW-CW							
RC		RZ		RM		RR	
0.3736	0.3874	0.3551	0.376	0.3376	0.3616	0.3205	0.3481
0.3548	0.3736	0.3376	0.3616	0.3207	0.3462	0.3028	0.3304
0.3512	0.3465	0.3366	0.3369	0.3222	0.3243	0.3068	0.3113
0.367	0.3578	0.3515	0.3487	0.3366	0.3369	0.3221	0.3261
0.3736	0.3874	0.3551	0.376	0.3376	0.3616	0.3205	0.3481

Note:  
Tolerance of measurement of color coordinates: ±0.01

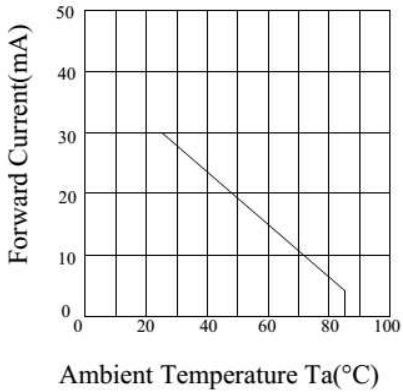
### Characteristic Curves



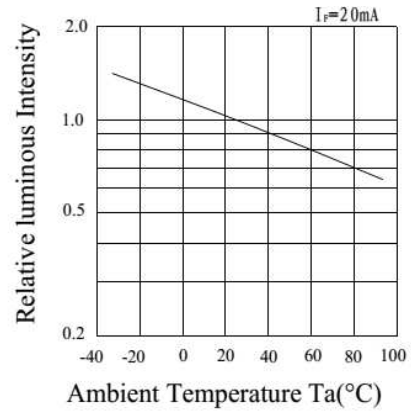
a) FORWARD CURRENT VS. FORWARD VOLTAGE



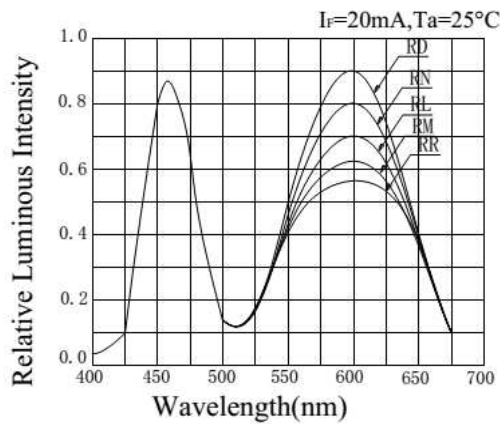
b) RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



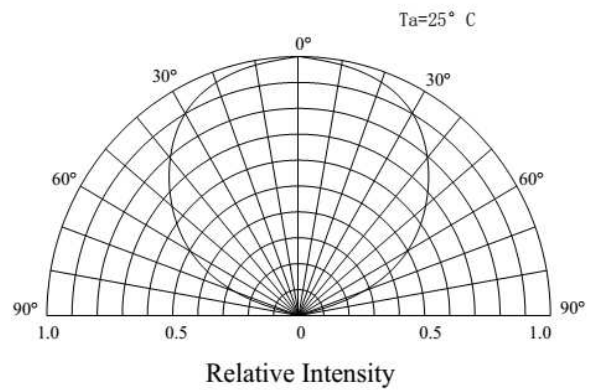
c) FORWARD CURRENT VS. AMBIENT TEMPERATURE



d) RELATIVE INTENSITY VS. AMBIENT TEMPERATURE



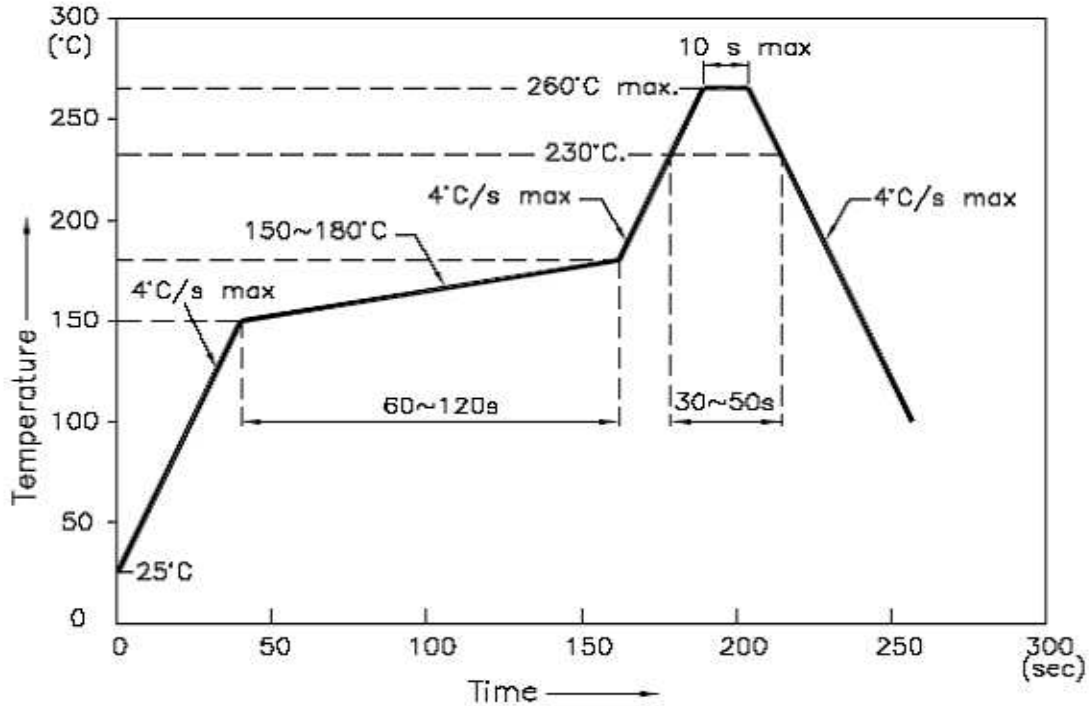
e) RELATIVE INTENSITY VS. WAVELENGTH



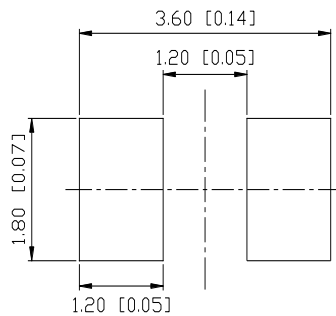
f) RADIATION PATTERN

## 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



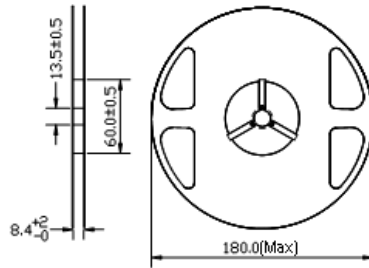
Units: mm

Tolerance: ± 0.2mm



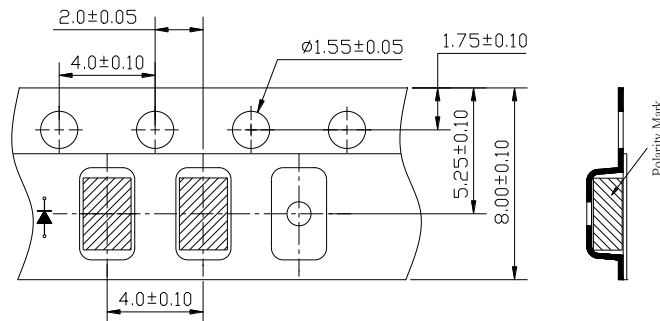
## Packing

Reel Dimension:



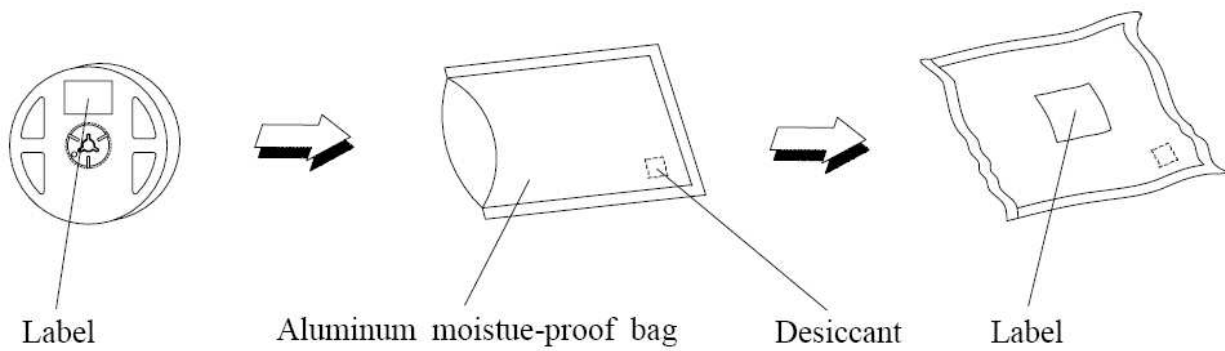
Unit: mm

Tape Dimension:



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
QBLP676-IW-WW	QBLP676-IW-WW	Iv=1950 mcd typ. @ 20mA / CCT=2760-3260K (RN) Bin	2,000 units
QBLP676-IW-NW	QBLP676-IW-NW	Iv =2000 mcd typ. @ 20mA / CCT=3640-4240K (RL) Bin	2,000 units
QBLP676-IW-CW	QBLP676-IW-CW	Iv=2000 mcd typ. @ 20mA / CCT=5300-7050K (RR & RM) Bin	2,000 units

## Revision History

Description:	Revision #	Revision Date
New Release of QBLP676-IW	V1.0	06/24/2011
Add bin and CCT range	V1.1	11/22/2011
Updated part number	V1.2	2/6/2012
Update format, spec, and P/N	V1.3	04/12/2012
Update Spec	V2.0	02/12/2013
Update spec and drawing	V2.1	10/08/2013
Update drawing tolerance, add CRI info	V2.2	12/06/2013
Update drawing dimension and VF bin	V3.0	04/14/2017

## 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.