QT-Brightek Oval Lamp Series

5mm Oval Through Hole Lamp

Part No.: QBOL5XX50D

XX: Color Code

Table of Contents:

Introduction

Feature:

- Color Diffused lens
- Packed in Bulk
- Super bright 5mm oval lamp
- AlInGaP Red/Yellow, InGaN Green/Blue
- Viewing angle: VA_X/VA_Y=110 °/50° typ.
- XX=Color

Description:

These super bright 5mm oval lamps with 7.0 mm lens height are suitable for all applications requiring higher brightness.

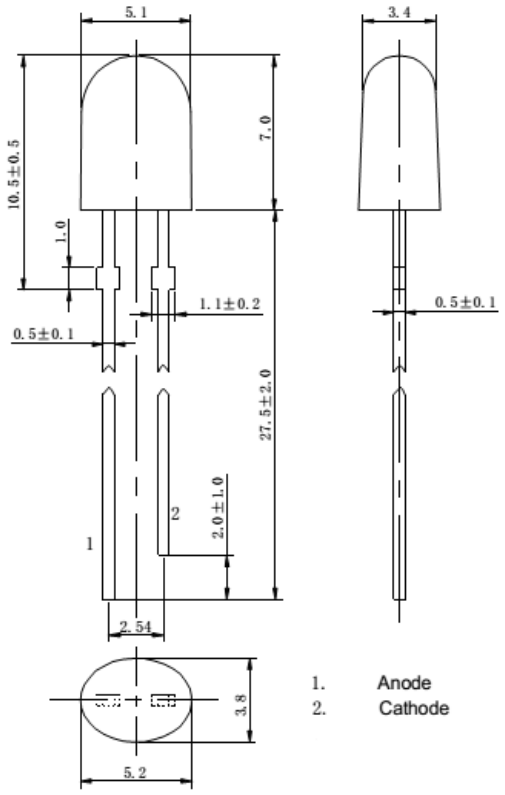
Application:

- Electronic signs and electronics board
- LED lighting

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant

Dimension:



Units: mm / Unidentified tolerance = +/-0.25mm

Electrical / Optical Characteristic (Ta=25 °C)

Product	Color	I_F(mA)	V_F (V)		λ_D (nm)			I_V (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBOL5R50D	Red	20	2.1	2.6	620	625	630	1200	1700
QBOL5Y50D	Yellow	20	2.1	2.6	585	590	595	1000	1500
QBOL5IG50D	True Green	20	3.2	3.5	520	525	530	2500	3600
QBOL5IB50D	Blue	20	3.2	3.5	465	470	475	600	1000

Absolute Maximum Rating

Material	P_d (mW)	I_F (mA)	IFP (mA)*	V_R (V)	T_{OP} (°C)	T_{ST} (°C)
AlInGaP (R/Y)	100	40	100	5	-25 to +85	-40 to +100
InGaN (IB/IG)	120	30	100	5	-30 to +85	-40 to +100

*Duty 1/10 @ 1KHz

Forward Voltage V_F for AlInGaP @ I_F=20mA

Bin	Min	Max	Unit
B	1.8	2.0	V
C	2.0	2.2	
D	2.2	2.4	
E	2.4	2.6	

Forward Voltage V_F for InGaN @ I_F=20mA

Bin	Min	Max	Unit
B	2.7	2.9	V
C	2.9	3.1	
D	3.1	3.3	
E	3.3	3.5	

Luminous Intensity I_V for Red @ I_F=20mA

Bin	Min	Max	Unit
6	1200	1450	mcd
7	1450	1750	
8	1750	2150	
9	2150	2650	
10	2650	3250	

Luminous Intensity I_V for Yellow @ I_F=20mA

Bin	Min	Max	Unit
5	1000	1200	mcd
6	1200	1450	
7	1450	1750	
8	1750	2150	
9	2150	2650	

Luminous Intensity I_V for True Green @ I_F=20mA

Bin	Min	Max	Unit
17	2500	3150	mcd
18	3150	3900	
19	3900	4850	
20	4850	6050	
21	6050	7550	
22	7550	9450	

Luminous Intensity I_V for Blue @ I_F=20mA

Bin	Min	Max	Unit
13	600	780	mcd
14	780	1000	
15	1000	1280	
16	1280	1650	

Dominant Wavelength λ_D for Red @ I_F=20mA

Bin	Min	Max	Unit
t	620	625	nm
u	625	630	

Dominant Wavelength λ_D for Yellow @ I_F=20mA

Bin	Min	Max	Unit
m	585	590	nm
n	590	595	

Dominant Wavelength λ_D for True Green @ I_F=20mA

Bin	Min	Max	Unit
A	518	522	nm
B	522	526	
C	526	530	

Dominant Wavelength λ_D for True Green @ I_F=20mA

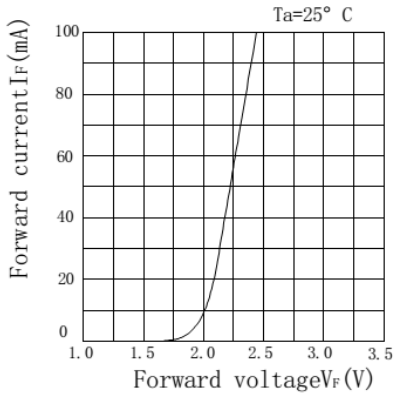
Bin	Min	Max	Unit
U	520	525	nm
V	525	530	

Dominant Wavelength λ_D for Blue @ I_F=20mA

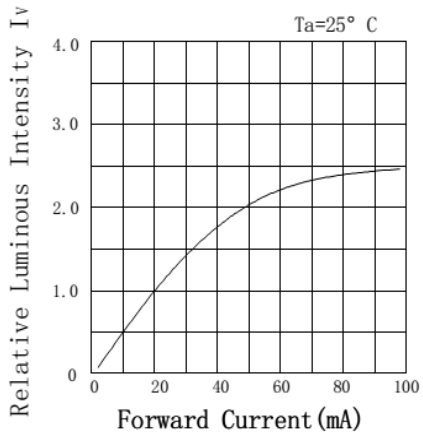
Bin	Min	Max	Unit
U	465	470	nm
V	470	475	

Characteristic Curves

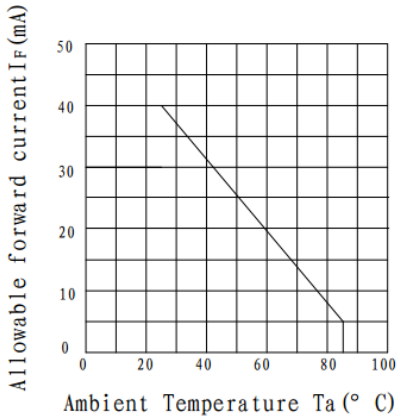
AlInGaP



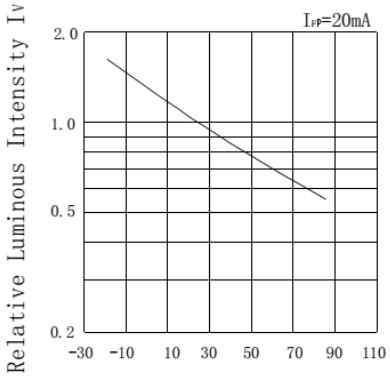
FORWARD CURRENT VS. FORWARD VOLTAGE



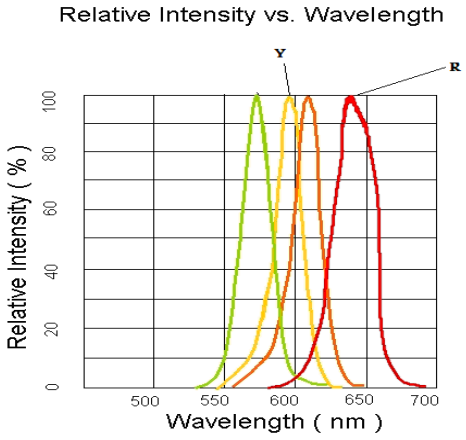
RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

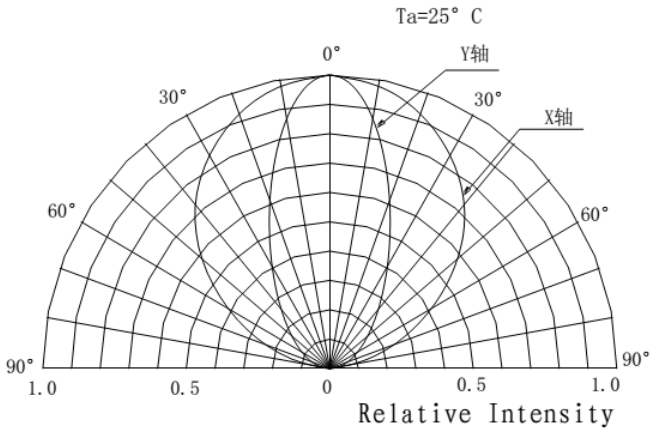


FORWARD CURRENT VS. AMBIENT TEMPERATURE

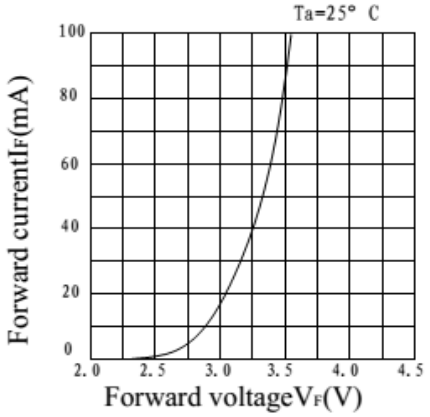


RELATIVE INTENSITY VS. AMBIENT TEMPERATURE

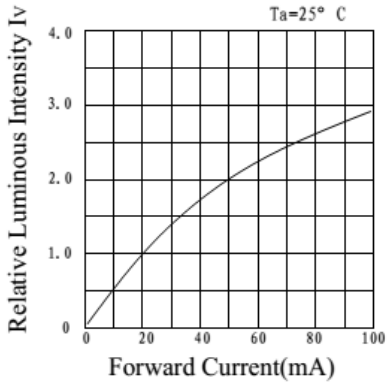




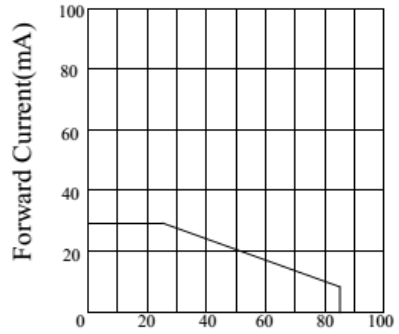
InGaN



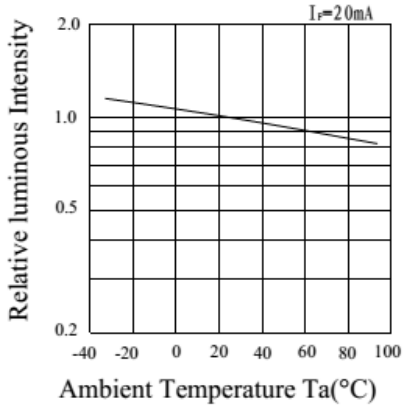
FORWARD CURRENT VS. FORWARD VOLTAGE



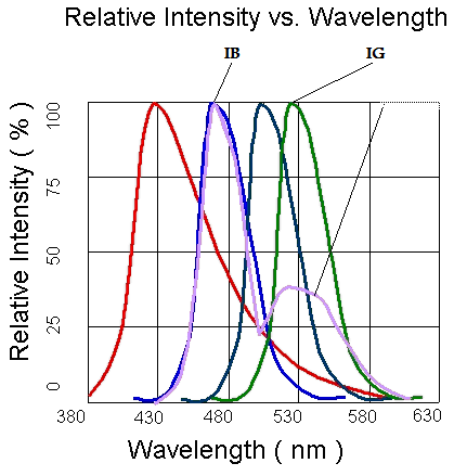
RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

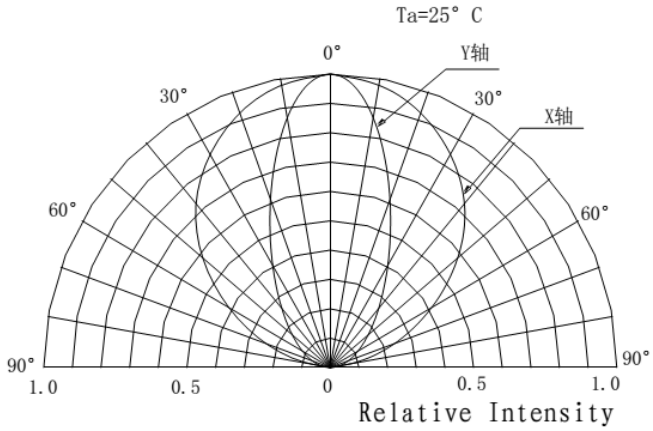


FORWARD CURRENT VS. AMBIENT TEMPERATURE



RELATIVE INTENSITY VS. AMBIENT TEMPERATURE





Ordering Information

Part #	Orderable Part #	Spec Range	Quantity per bag
QBOL5R50D	QBOL5R50D	Iv=1700mcd typ. @ I_F=20mA / Color: 620nm~630nm	500
QBOL5Y50D	QBOL5Y50D	I_V=1500mcd typ. @ I_F=20mA / Color: 585nm~595nm	500
QBOL5IG50D	QBOL5IG50D	Iv=3600mcd typ. @ I_F=20mA / Color: 520nm~530nm	500
QBOL5IB50D	QBOL5IB50D	Iv=1000mcd typ. @ I_F=20mA / Color: 465nm~475nm	500

Revision History

Description:	Revision #	Revision Date
New Release of QBOL5X50D Series	V1.0	06/06/2011
Amend the part number to QBOL5XX50D_series	V1.1	06/25/2011
Added binning information	V1.2	02/27/2012
Update format and spec	V1.3	05/01/2012
Update red/blue/ green spec and add Yellow	V1.4	03/07/2013
Update dimension drawing / Update Red and Yellow Spec / Update binning	V2.0	02/21/2014
Update Green and Blue specs and binning	V2.1	02/26/2015

Disclaimer

QT-BRIGHTEK reserves the right to make changes without further notice to any products herein to improve reliability, function or design. QT-BRIGHTEK does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights, nor the rights of others.

Life Support Policy

QT-BRIGHTEK's products are not authorized for use as critical components in life support devices or systems without the express written approval of QT-BRIGHTEK. As used herein:

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.