

**QT-Brightek Lamp Series**

**5mm IR Lamp LED**

**Part No.: QBED8120**

Product: QBED8120	Date: May 05, 2015	Page 1 of 7
	Version# 1.2	

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## Introduction

**Feature:**

- Water clear lens
- Package in bulk
- High radiant intensity
- Peak wavelength  $\lambda_p=940\text{nm}$
- 20 degree viewing angle

**Description:**

This device is spectrally match with phototransistor, photodiode, and infrared receiver module

**Application:**

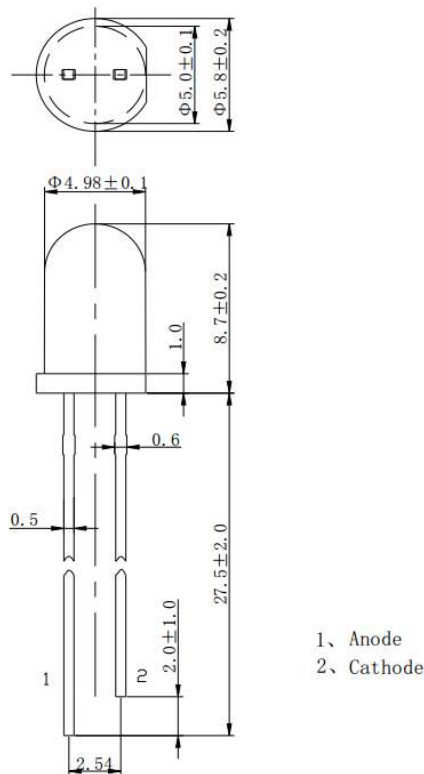
- Free air transmission system
- Optoelectronic switch
- Infrared applied system
- Smoke Detector

**Certification & Compliance:**

- TS16949
- ISO9001
- RoHS Compliant



**Dimension:**



Units: mm / tolerance = +/-0.2mm

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

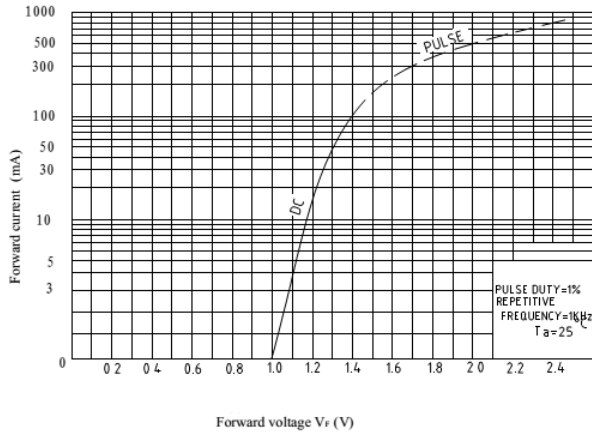
Parameter	Symbol	Test Condition	Output			Units
			Min.	Typ.	Max.	
Forward Voltage	$V_F$	$I_F=50\text{mA}$	-	1.3	1.50	V
Pulse Forward Voltage	$V_{FP}$	$I_{FP}=600\text{mA}, t_p=10\mu\text{s}$	-	-	3	
Reverse Current	$I_R$	$V_R=5\text{V}$	-	-	10	$\mu\text{A}$
Radiant Intensity	$I_E$	$I_F=50\text{mA}$	30	50	-	mW/sr
		$I_F=100\text{mA}, t=20\text{ms}$	60	80	-	
Peak Radiation Wavelength	$\lambda_P$	$I_F=50\text{mA}$	-	940	-	nm
Half Spectrum Width	$\Delta\lambda$	$I_F=50\text{mA}$	-	50	-	nm
Viewing Angle	$2\theta_{1/2}$	$I_F=50\text{mA}$	-	20	-	deg
Switch Time	$t_r/t_f$	$I_{FP}=100\text{mA}, f=1\text{KHz}, t_p/T=1\%$	-	1/1	-	$\mu\text{s}$

**Absolute Maximum Rating**

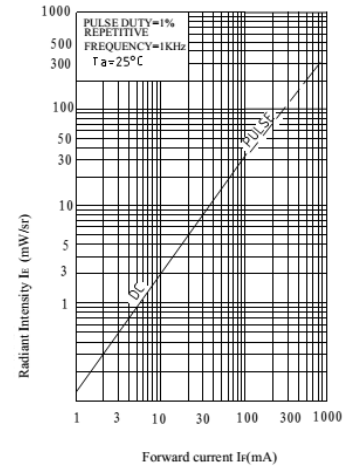
Parameter	Symbol	Rating	Units
Continuous Forward Current	$I_F$	100	mA
Peak Forward Current*	$I_{FP}$	900	mA
Reverse Voltage	$V_R$	5	V
Power Dissipation at (or below) 25 °C Free Air Temperature	$P_d$	120	mW
Operating Temperature	$T_{opr}$	-25 ~ +85	°C
Storage Temperature	$T_{stg}$	-40 ~ +100	°C

\*Duty: 1/100 @ 1kHz

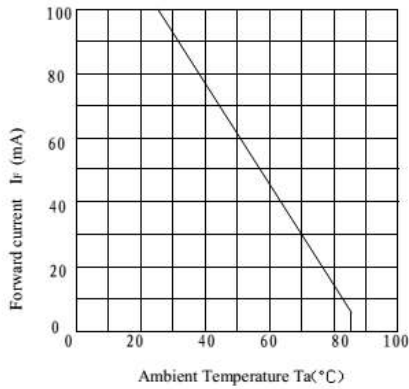
**Characteristic Curves**



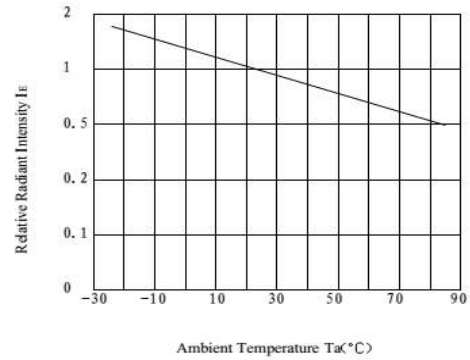
**Fig.1 Forward Current vs. Forward Voltage**



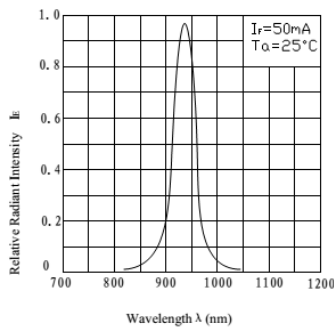
**Fig.2 Radiant Intensity vs. Forward Current**



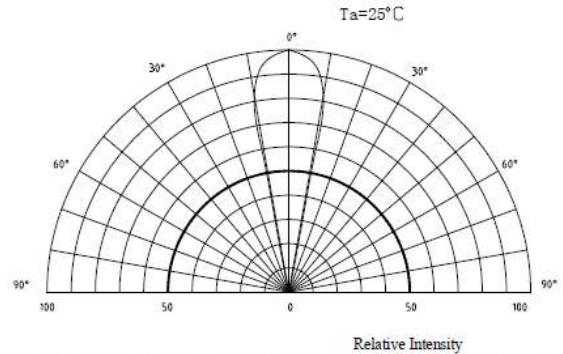
**Fig.3 Forward Current vs. Ambient Temperature**



**Fig.4 Relative Radiant Intensity vs. Ambient Temperature**



**Fig.5 Relative Radiant Intensity vs. Wavelength**



**Fig.6 Relative Radiant Intensity vs. Angular Displacement**

**Packing**

500pcs per bag

**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 bag
QBED8120	QBED8120	I <sub>e</sub> =80mW mW/sr. typ. @ I <sub>F</sub> =100mA, t=20ms / λ <sub>P</sub> =940nm typ.	500pcs

## Revision History

Description:	Revision #	Revision Date
New Release of QBED8120	V1.0	06/03/2011
Update new format/ Amend the optical/ Electrical Characteristic	V1.1	03/27/2014
Fix error in packing spec / Update I <sub>FP</sub> Max	V1.2	05/05/2015

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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.