



## Product Outline:

QLIR01BYGM is an infrared LED, package dimension is Ø5mm lamp ,860nm emitting diode in AlGaAs/Si with high speed and high radiant power.

## Features:

- Infrared 860nm led
- With Black resign
- Infrared 5mm round lamp
- 20° Viewing angle ( $\pm 10^\circ$ )
- RoHS compliant
- Custom Bin available upon special request

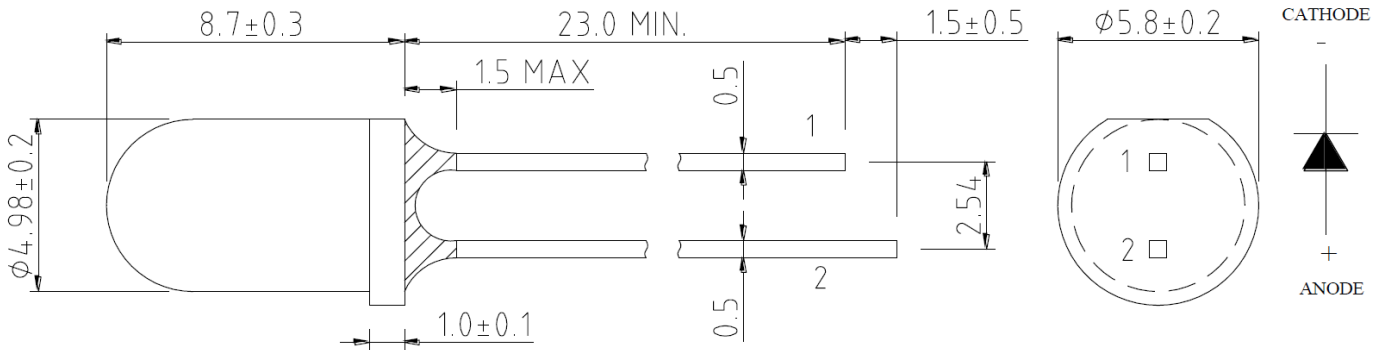
## Application:

- Electronic signs and electronics board
- General purpose indicator application
- Smoke-automatic fire detectors
- Lighting application

## Compliance and Certification:



## ■ Mechanical Property: (Dimension)



**SING:** 1. CATHODE  
2. ANODE

Tolerance is  $\pm 0.25\text{mm}$  unless otherwise specified

## ■ ELEMENT APPEARANCE

Model No.	Material	Lighting Color	Resin Color
QLIR01BYGM	AlGaAs	Non-Visible	Black

## ■ ABSOLUTE MAXIMUM RATINGS AT Ta=25°C

Characteristic	Symbol	Rating	Unit
Forward direct current	IFM	200	mA
Ta=50°C, pulsed operation tp = 34us at D= 1/100	IFSM	1	A
Reverse voltage	VRM	5	V
Operating temperature	Topr	-40 to +85	°C
Storage temperature	Tstg	-40 to +100	°C
Power dissipation	Pd	380	mW



## ■ ELECTRO-OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Radiant Intensity	Ie	IF=100mA	250			mW/sr
Forward Voltage	Vf	IF=100mA		1.5	2.0	V
Reverse current	Ir	Vr=5V			10	μA
Peak emission wavelength	λp	IF=100mA		860		nm
Spectral band width @ 50%	▲λ	IF=100mA		40		nm
Rise time / Fall time	Tr/Tf	IF=100mA		25/15		ns
Viewing angle	2θ 1/2	IF=100mA		20		Deg

\*Radiant Intensity Measurement allowance is ±15%

\*\* Forward voltage Measurement allowance is ±0.05V

\*\*\* Peak emission wavelength Measurement allowance is ±1nm

### Dominate Wavelength (nm) Bin:

Wd (nm)			
Color	Code name	Min.	Max.
IR	R850	840	870

Measurement tolerance is +/- 2nm

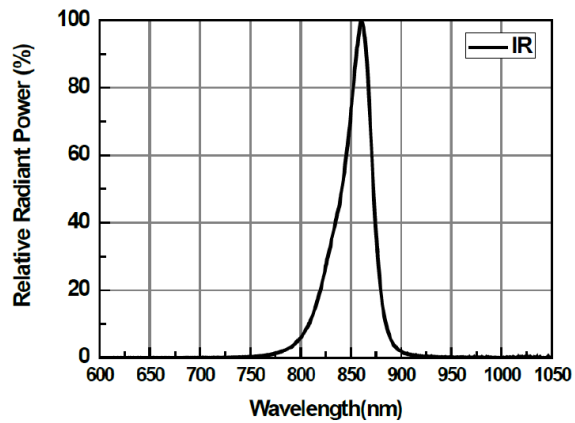
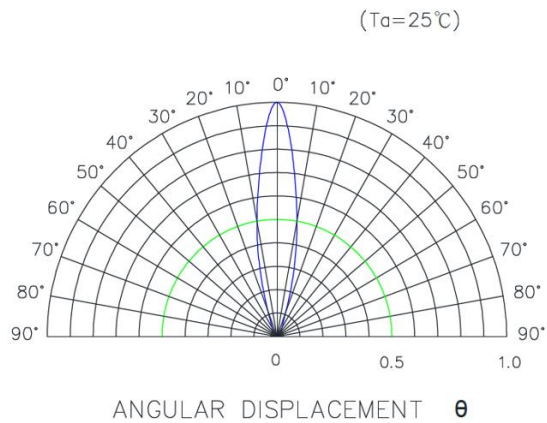
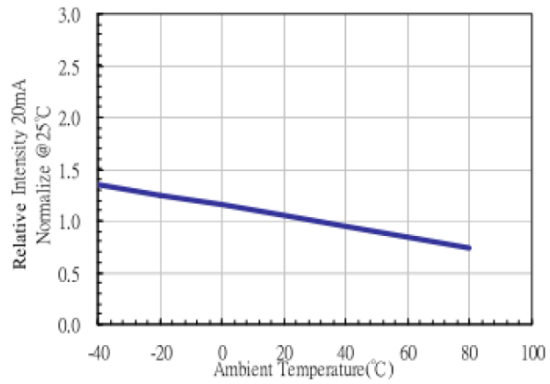
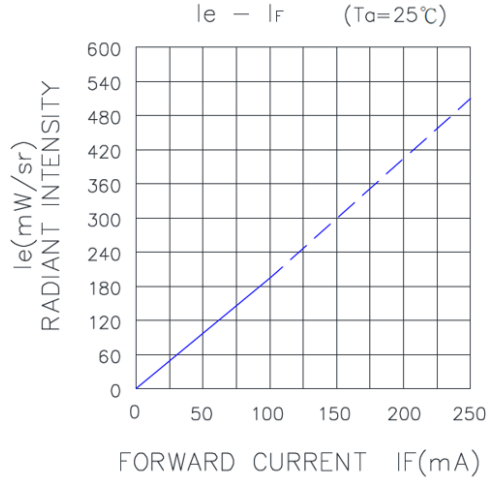
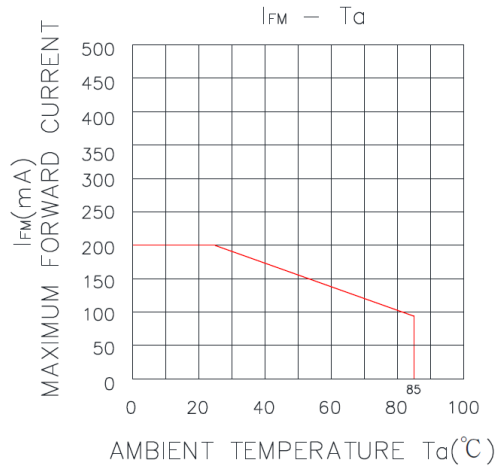
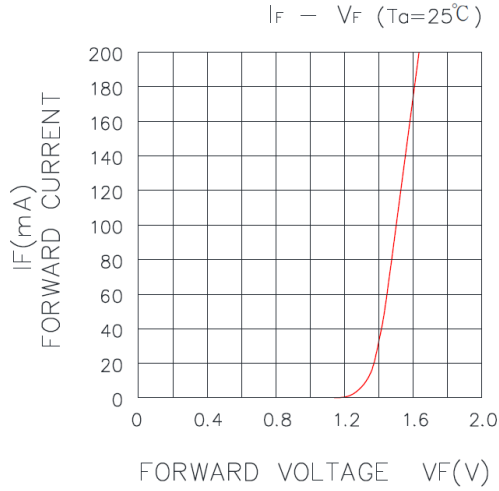
### Radiometric power Bin:

Rank @100mA (mW/sr)			
Color	Code name	Low	High
IR	2	250	325
	3	325	430
	4	430	580
	5	580	750

luminous flux tolerance is ± 7%



## Characteristic Curves



**■ Reliability test:**

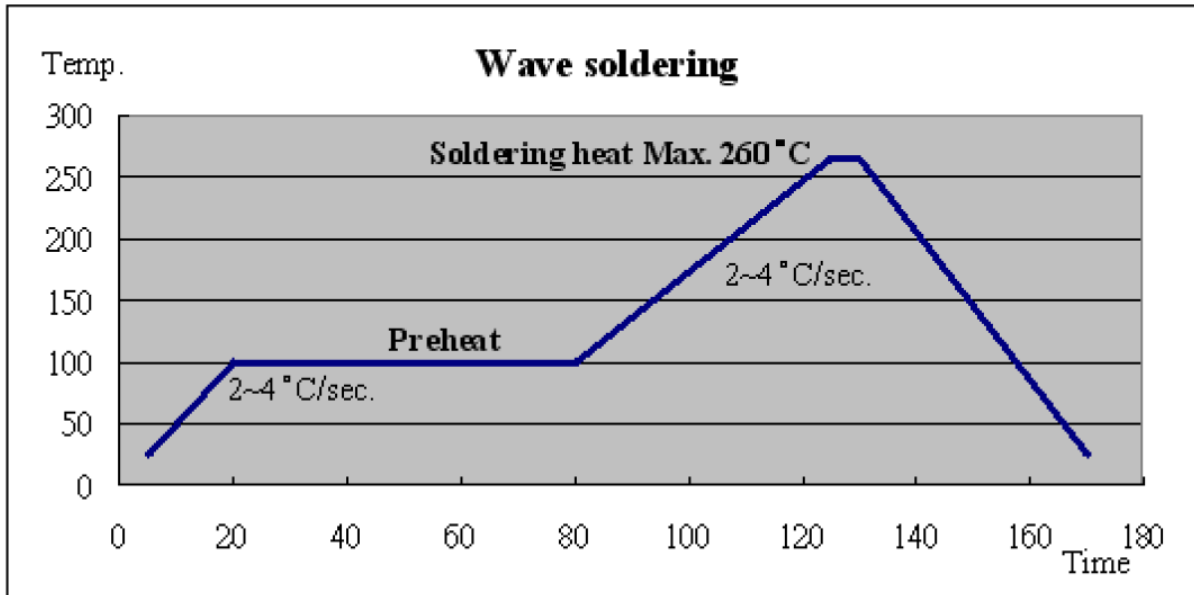
No	Item	Condition	Time/Cycle	Criteria	Ac / Re	Sample size
1	Soldering Heat Test	260°C	5 sec	Open / Short	0 / 1	60 pcs
2	Thermal Shock	0 (5min) °C ~100 (5min) °C	20 cycle	Open / Short	0 / 1	60 pcs
3	High Temp. Storage	100°C	1000 Hrs	Open / Short	0 / 1	60 pcs
4	Low Temp. Storage	-40°C	1000 Hrs	Open / Short	0 / 1	60 pcs
5	Temperature Cycle Test	-40 ~85 °C	100 Cycles , 200Hrs	Open / Short	0 / 1	60 pcs
6	High Temp. High Humidity Test	60 , 90% RH °C	1000 Hrs	Open / Short	0 / 1	60 pcs
7	DC Operation Life Test	IF=100mA	1000 Hrs	Power decay	≤ 30%	60 pcs



## ■ Solder Profile:


-The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):


Shape	Lead Frame Type / Holder Type
Hand soldering	1.Temp.at tip of iron : 300 °C MAX. 2.Soldering time : 3 sec MAX. 3.Distance : 3 mm MIN (from solder joint to case)
DIP soldering	1.Preheat temp : 100 °C MAX , 60 sec MAX. 2.Bath temp : 260 °C MAX. 3.Bath time : 5 sec MAX. 4.Distance : 3 mm MIN (From solder joint to case).
Reflow soldering	NO
Shape	SMD Type
Hand soldering	1.Temp.at tip of iron : 300 °C MAX. 2.Soldering time : 3 sec MAX.
DIP soldering	1.Preheat temp. : 120-150 °C , 60-120 sec. 2.Bath temp. : 260 °C MAX. 3.Bath time : 5 sec
Reflow soldering	1.Preheat temp. : 150-180 °C , 120 sec MAX. 2.Peak temp. : 260 °C MAX. 3.Peak time : 10 sec MAX.





## ■ Taping & Packing: Per Bag

### Labeling



  
 Quantity: XXXX

  
 Quelighting P/N: XXXXXX

  
 Lot number: XXXXX

Iv Bin: XX    Color Bin: XX    Vf Bin: XX

Date Code: XXXX

### Ordering Information:

Part #	Multiple Quantities	Quantity per bag
QLIR01BYGM		500pcs





**Revision History:**

Revision Date:	Changes:	Version #:
02-11-2019	Initial release	1.0
03-07-2019	Revise pulse and Radiant Intensity to min. 250mW	1.1

