

# CERAMIC LED SPECIFICATION

Drawn by	Checked by	Approved by

Rev. 0.0



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## ULP-GUW02B-EP

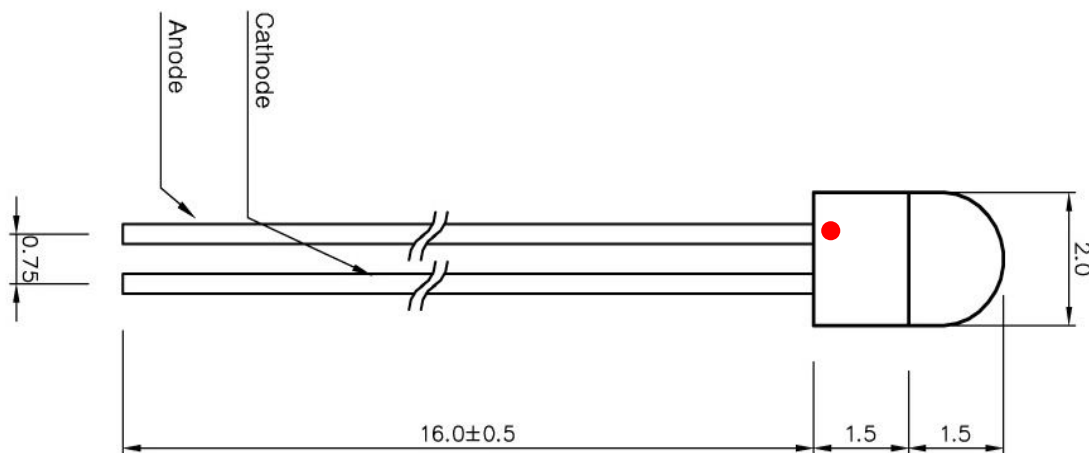
### 1. Features

- InGaN blue chip and red phosphor technologies mounted in cleared package.
- Ceramic stem type LED lamp.
- 2mm Round top color diffused type.
- High luminous intensity.
- Fast Response time.

### 2. Applications

- Analytical Instruments.
- Toy Instrument.
- Panel Indications.
- Color printers & Scanners.
- Decorative lightning

### 3. Outline Dimension



Unit :mm Tolerance  $\pm 0.2$



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### 4. Absolute Maximum Ratings (Ta=25°C)

Parameter	Sym	Rating	Unit
Forward Current	IF	30	mA
Reverse Voltage	VR	5	V
Power Dissipation	PD	102	mW
Operation Temp	Topg	-30 ~ + 85	°C
Storage Temp	Tstg	-40 ~ + 100	°C

### 5. Opto electric Characteristics (Ta=25°C)

Parameter	Sym	Condition	Min	Typ	Max	Unit
Forward Voltage	VF	IF = 20mA	2.90	3.15	3.40	V
Reverse Current	IR	VR = 3V			10	μA
Luminous Intensity	L	IF = 20mA		885		mcd
Chromaticity Coordinates		"		X:0.418 Y:0.378		
Line half width	Δλ	"		100		nm
Capacitance	Co	Vo=0, f=1MHz		50		pF
Response time	t	"		1		nsec
Viewing angle		2 X theta		150		°

### 6. Specification of Color Bin Grading

Forward Voltage(Vf)			λd(nm)		Iv (mcd) @20mA		
Bin	Min	Max	Min	Max	Bin	Min	Typ
R	2.90	3.40	0.36	0.31			
S	2.90	3.40	0.41	0.37			
T	2.90	3.40	0.44	0.40			

### 7 Soldering Conditions ( at 2mm distance from lead entry)

Soldering Temp ≤ 260°C

Soldering Time : 3 sec at location 2.0mm away from the base of the epoxy bulb.

### 8. Caution in ESD

Static Electricity and surge damages the LEDs, It is recommended to use a wrist band or anti-electrostatic Glove when handling the LEDs. All devices, Equipment and machinery must be properly grounded.



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### 8. Reliability Test

#### 1) Result of reliability Test

Test Item	Test Conditions	Note	Number of Damaged
Steady State Operating Life	Ta = 25°C IF=20mA	1000hrs	0/100
Steady State Operating Life of Low Temperature	Ta=30°C, IF=20mA	1000hrs	0/100
Steady State Operating Life of High Temperature	Ta=85°C, IF=20mA	1000hrs	0/100
Steady State Operating Life of High Humidity Heat	60°C, RH=90% IF=15mA	500hrs	0/100
Resistance to Soldering Heat	Tsld=260 ± 5°C, 10sec. 3mm from the base of the epoxy bulb	1 time	0/100
Solder ability	Tsld=260 ± 5°C, 5sec. (using flux)	1 time Over 90%	0/100
Thermal Shock	0°C ~ 100°C 15sec. 15sec.	100 cycles	0/100
Temperature Cycle	40°C ~ 25°C ~ 100°C ~ 25°C 30min. 5min. 30min. 5min.	100 cycles	0/100
Moisture Resistance Cyclic	25°C ~ 65°C ~ 10°C 90%RH 24hrs / 1cycle	10 cycles	0/100
High Temperature Storage	Ta = 100°C,	1000hrs	0/100
Temperature Humidity Storage	Ta = 60°C RH=90%	1000hrs	0/100
Low Temperature Storage	Ta = -40°C	1000hrs	0/100

#### 2) The reliability criteria of Lamp LED

Item	Symbol	Test Conditions	Criteria for Judgement.	
			Min.	Max.
Forward Voltage	VF	IF=20mA	-	U.S.L. *) X 1.1
Reverse Current	IR	VR=5V	-	U.S.L. *) X 2.0
Luminous Intensity	IV	IF=20mA	L.S.L**) X 0.7	-

\*) U.S.L. : Upper Standard Level

\*\*) L.S.L. : Lower Standard Level.

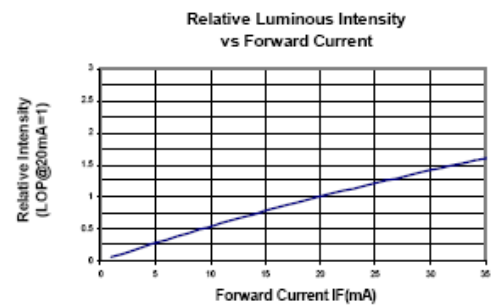
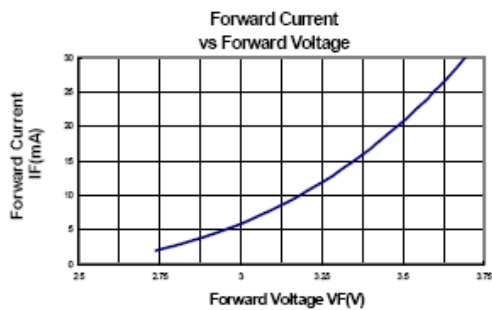
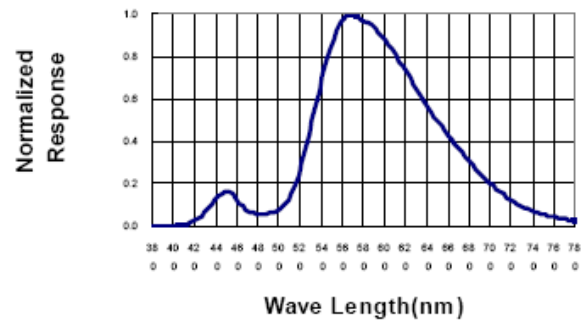
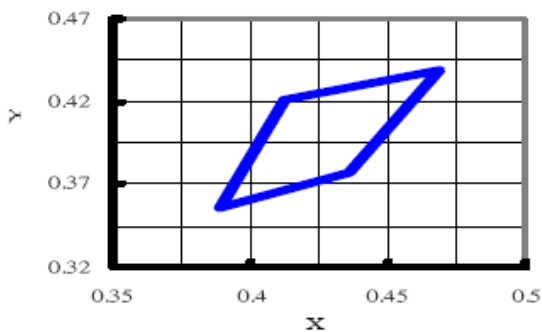


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### Typical Electrical / Optical Characteristics Curves (25°C Ambient Temperature Unless Otherwise Noted)

CIE 1931 Chromaticity Diagram



Forward Current Derating Curve

