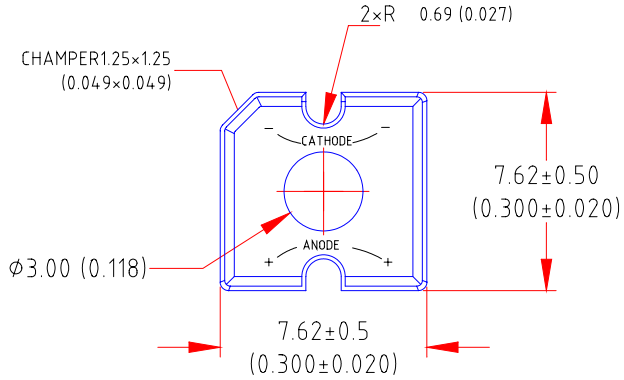
LUCKY LIGHT

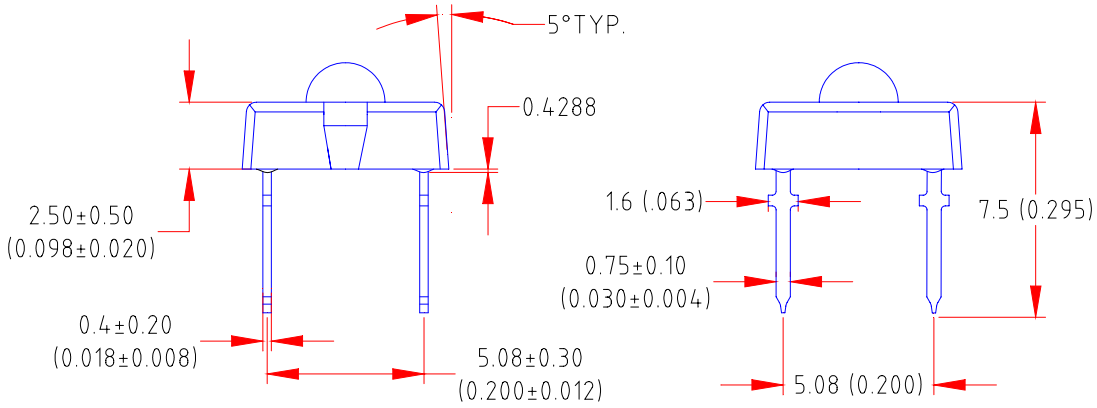
# LL-U47UY1C-002

## DATA SHEET

QC:　　ENG:　　Prepared By:

# Package Dimension:




| Part NO. | Material | Lens Color | Source Color |
|---|---|---|---|
| LL-U47UY1C-002 | AlGaInP | Water Clear | Ultra Yellow |

Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(.010”)mm unless otherwise noted.
3. Protruded resin under flange is 1.0mm(.04”) max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

## Test items and Results

| Type | Test Item | REF. Standard | Test Condition | Note | Number of Damaged |
|---|---|---|---|---|---|
| Environmental Sequence | Temperature Cycle | JIS C 7021 (1977) A-4 | -40℃→25℃→100℃→25℃ 30mins, 5mins, 30mins, 5mins | 100cycles | 0/100 |
| | Thermal Shock | MIL-STD-107D | -40℃→100℃ 15mins, 15mins | 100cycles | 0/100 |
| | High Humidity Heat Cycle | JIS C 7021 (1977) A-5 | 30℃→65℃ 90％RH 24hrs/1 cycle | 10cycles | 0/100 |
| | High Temperature Storage | JIS C 7021 (1977) B-10 | Ta=100℃ | 1000hrs | 0/100 |
| | Humidity Heat Storage | JIS C 7021 (1977) B-11 | Ta=60℃ RH90％ | 1000hrs | 0/100 |
| | Low Temperature Life Test | JIS C 7021 (1977) B-12 | Ta=40℃ | 1000hrs | 0/100 |
| Operation Sequence | Life Test | JIS C 7035 (1985) | Ta=60℃ If=20mA | 1000hrs | 0/100 |
| | High Humidity Hear Life Test | --- | 60℃ RH=90％ If=20mA | 500hrs | 0/100 |
| | Low Temperature Life Test | --- | Ta=-30℃ If=20mA | 1000hrs | 0/100 |
| Destructive Sequence | Resistance to Soldering Heat | JIS C 7021 (1977) A-11 | Tsol=260±5℃ 10sec (3mm from the base of the epoxy bulb) | 1 time | 0/20 |
| | Soldier ability | JIS C 7021 (1977) A-2 | Tsol=235±5℃ 5sec (using flux) | 1 time (over 95％) | 0/20 |
| | Lead Pull/Bend Test | JIS C 7021 (1977) A-11 | Load 2.5N(0.25kgf) 0° →90° →0° bend 3 times | No noticeable damage | 0/20 |

Refer to reliability test standard specification for in this line.

Criteria for Judging The Damage

| Item | Symbol | Test Condition | Criteria For Judgment | |
|---|---|---|---|---|
| | | | Min. | Max |
| Forward Voltage | Vf | If=20mA | --- | Initial Data x 1.1 |
| Reverse Current | Ir | Vr=5V | --- | Initial Data x 2.0 |
| Luminous Intensity | Iv | If=20mA | Initial Data x 0.7 | --- |

## Absolute Maximum Ratings at Ta=25℃

| Parameter | MAX. | Unit |
|---|---|---|
| Power Dissipation | 100 | mW |
| Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width) | 100 | mA |
| Continuous Forward Current | 35 | mA |
| Derating Linear From 50℃ | 0.4 | mA/℃ |
| Reverse Voltage | 5 | V |
| Operating Temperature Range | -40℃ to +80℃ | |
| Storage Temperature Range | -40℃ to +80℃ | |
| Lead Soldering Temperature [4mm(.157") From Body] | 260℃ for 5 Seconds | |

## Electrical Optical Characteristics at Ta=25℃

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Condition |
|---|---|---|---|---|---|---|
| Luminous Intensity | Iv | 500 | 1000 | 2000 | mcd | $I_F$=20mA (Note 1) |
| Viewing Angle | $2\theta_{1/2}$ | 40 | 46 | 52 | Deg | (Note 2) |
| Peak Emission Wavelength | λp | 587 | 592 | 597 | nm | $I_F$=20mA(Note 3) |
| Spectral Line Half-Width | △λ | 16 | 20 | 25 | nm | $I_F$=20mA |
| Forward Voltage | $V_F$ | 1.8 | 2.25 | 2.8 | V | $I_F$=20mA |
| Reverse Current | $I_R$ | --- | --- | 100 | μA | $V_R$=5V |

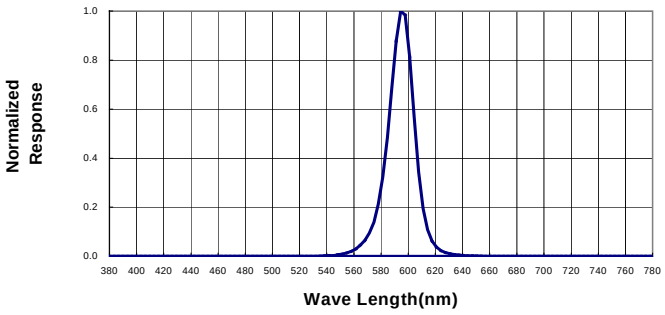
Note:

1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity
3. The dominant wavelength(λp) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

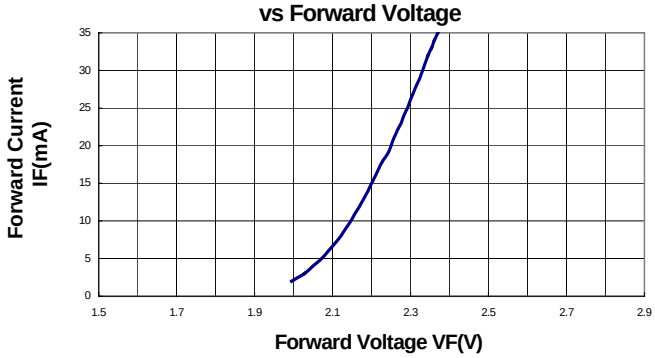
Typical Electrical / Optical Characteristics Curves

(25℃ Ambient Temperature Unless Otherwise Noted)

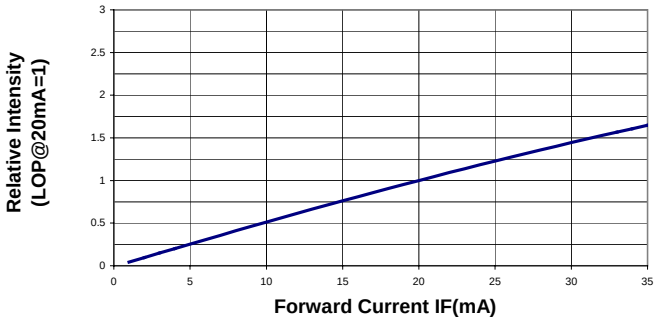
**Spectral Radiance (Peak @ 592nm)**




**Forward Current vs Forward Voltage**




**Relative Luminous Intensity vs Forward Current**




Beam Pattern