

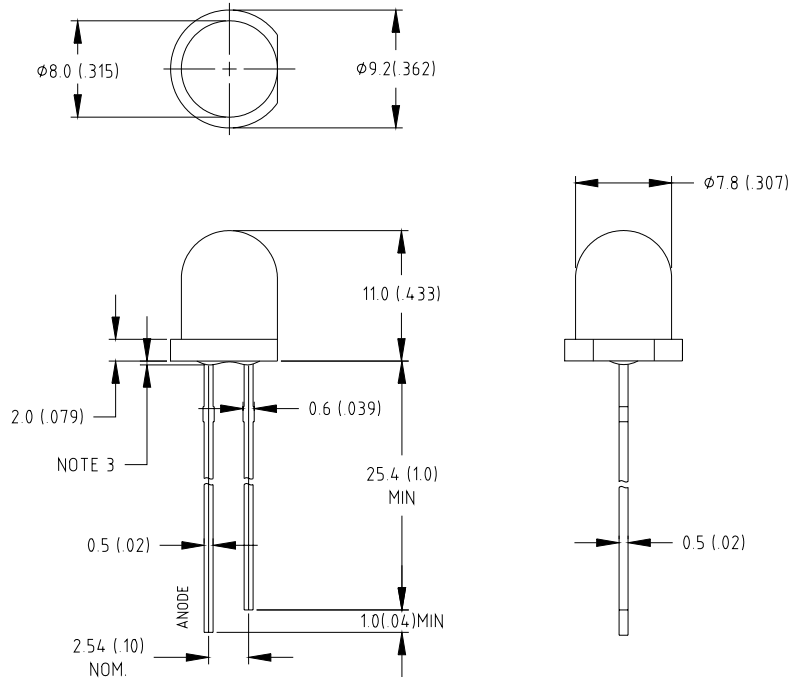
**SPECIFICATIONS FOR UPEC LAMP TYPE RED LED**

**MODEL: UE-LR800NR0-1XC**

## Features

- High intensity
- 8mm diameter package
- General purpose leads
- Reliable and rugged

## Package Dimensions



| Part NO.        | Chip Material | Lens Color  | Source Color |
|-----------------|---------------|-------------|--------------|
| UE-LR800NR0-1XC | AlGaInP       | Water Clear | Red          |

## Notes

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25\text{mm}$  (.010") 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.
6. Precautions for ESD:  
**STATIC SHIELD** Electricity and surge damages the LED. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.
7. This data-sheet only valid for six months.

| Mark | Date      | Description | Approved | Checked | Symbol     | UPEC LED        |
|------|-----------|-------------|----------|---------|------------|-----------------|
| -    | JUN/07/04 |             | Justin   | Tsai    | Name       | UE-LR800NR0-1XC |
|      |           |             |          |         | Drawing No | WIENDS197       |
|      |           |             |          |         |            |                 |

### Absolute Maximum Ratings at Ta=25

| Parameter   | Symbol | Max          | Unit |
|---|--------|--------------|------|
| Power Dissipation   | PD     | 100          | mW   |
| Pulse Forward Current   | IPF    | 100          | mA   |
| Forward Current   | IF     | 35           | mA   |
| Reverse Voltage   | VR     | 5            | V    |
| Operating Temperature Range   | Topr   | - 40 to + 80 | °C   |
| Storage Temperature Range   | Tstg   | - 40 to + 80 | °C   |
| Lead Soldering Temperature [ 1.6mm (0.063inch) From Body ] 260 °C For 5 Seconds |        |              |      |

### Electrical / Optical Characteristics at Ta=25

| Parameter           | Symbol            | Min. | Typ. | Max.  | Unit | Test Condition                |
|---------------------|-------------------|------|------|-------|------|-------------------------------|
| Luminous Intensity  | Iv                | 2200 | 7000 | 14000 | mcd  | I <sub>f</sub> =20mA (Note 1) |
| Viewing Angle       | 2θ <sub>1/2</sub> | ---  | 20   | ---   | Deg  | (Note 2)                      |
| Dominant Wavelength | λ <sub>d</sub>    | ---  | 625  | ---   | nm   | I <sub>f</sub> =20mA (Note 3) |
| Forward Voltage     | V <sub>F</sub>    | ---  | 2.2  | 2.7   | V    | I <sub>F</sub> = 20mA         |
| Reverse Current     | I <sub>R</sub>    | ---  | ---  | 100   | μA   | V <sub>R</sub> = 5V           |

| BIN   | LR        | LS        | LT        | LU         | LV          | --- |
|-------|-----------|-----------|-----------|------------|-------------|-----|
| Range | 2200-3300 | 3300-4900 | 4900-7300 | 7300-11000 | 11000-16500 | --- |

Measurement Uncertainty of the Luminous Intensity: ± 15%

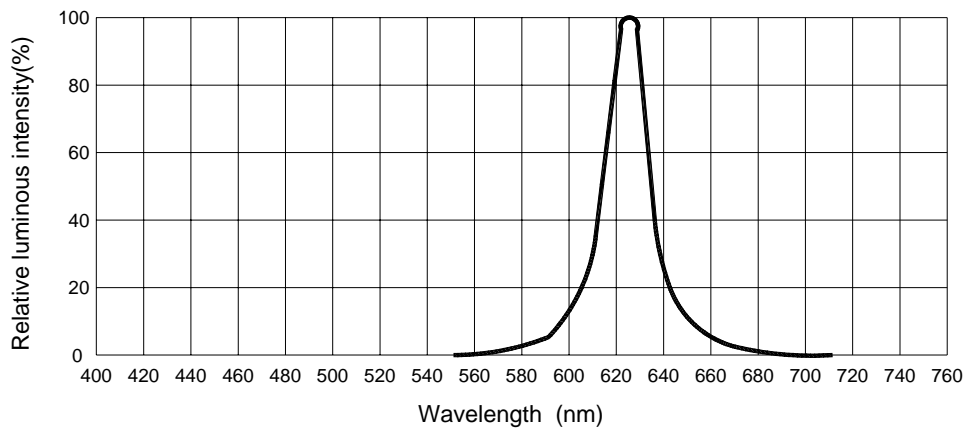
### Notes

- Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
- θ<sub>1/2</sub> is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
- The dominant wavelength (λ<sub>d</sub>) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

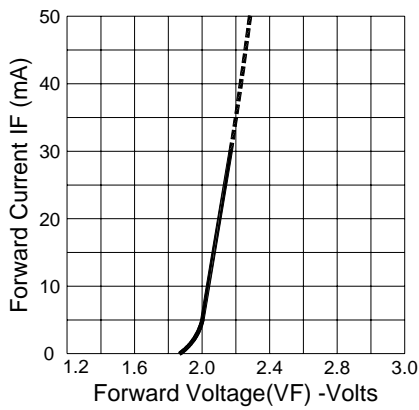
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# Typical Electrical / Optical Characteristics Curves

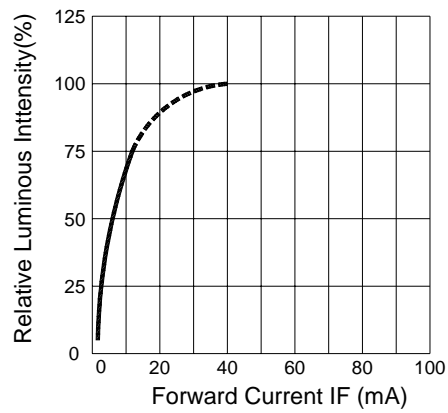
Spectrum Distribution



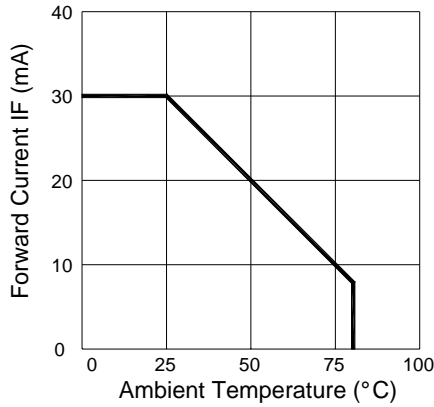
Forward Current VS. Forward Voltage



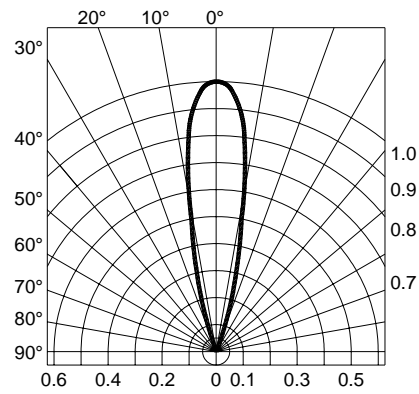
Luminous Intensity VS. Forward Current



Forward Current VS. Ambient Temperature



Radiation Diagram



|      |           |                     |          |         |            |                 |
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### Reliability Test Items and Conditions

| No. | Item                             | Test Conditions                             | Test Hours / Cycle | Sample Q'ty | Ac/Re |
|-----|----------------------------------|---|--------------------|-------------|-------|
| 1   | Solder Heat                      | TEMP : 260 ±5                               | 5 sec              | 22 pcs      | 0/1   |
| 2   | Temperature Cycle                | H : +85 30min.<br>∩ 5min.<br>L : -35 30min. | 50 cycle           | 22 pcs      | 0/1   |
| 3   | Thermal Shock                    | H : +85<br>∩ 5min.<br>L : -35 5min.         | 50 cycle           | 22 pcs      | 0/1   |
| 4   | High Temperature Storage         | TEMP : 85                                   | 1000 hrs           | 22 pcs      | 0/1   |
| 5   | Low Temperature Storage          | TEMP : -35                                  | 1000 hrs           | 22 pcs      | 0/1   |
| 6   | DC Operating Life                | I <sub>F</sub> = 20mA                       | 1000 hrs           | 22 pcs      | 0/1   |
| 7   | High Temperature / High Humidity | 65 / 85 ~ 90% R.H.                          | 1000 hrs           | 22 pcs      | 0/1   |

#### Judgment Criteria

|                       |                                   |
|-----------------------|-----------------------------------|
| Forward Voltage Vf    | V <sub>fmax</sub> Increase < 1.2x |
| Reverse Current Ir    | I <sub>rmax</sub> Increase < 2x   |
| Luminous Intensity Iv | Iv Decay < 50%                    |

Note : Measurement shall be taken after the tested samples have been returned to normal ambient conditions (generally after two hours)

|      |           |                     |          |         |            |                 |
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