



# BRIGHT LED ELECTRONICS CORP.

## LED LAMPS SPECIFICATION

●COMMODITY : 3.6\*6.3\*6.8mm 1.0” Lead Rectangular

●DEVICE NUMBER : BL-R413P

PAGE: 2

●ELECTRICAL AND OPTICAL CHARACTERISTICS (Ta=25°C)

VERSION : 1.0

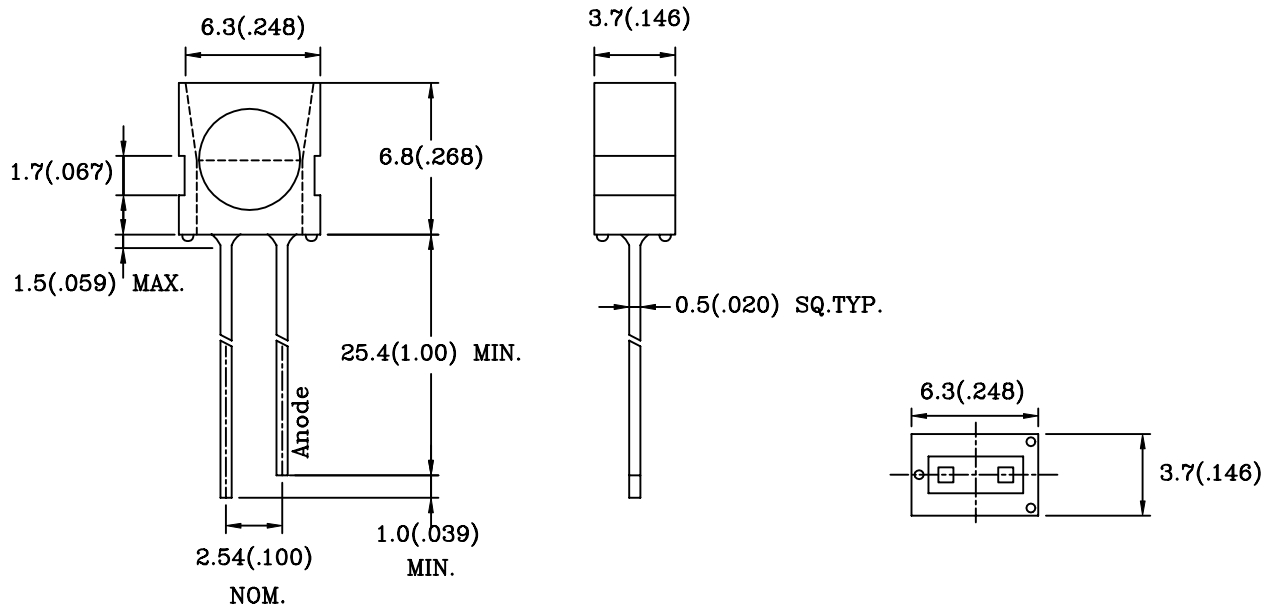
| Chip          |                             | Lens<br>Appearance | Absolute Maximum Rating |            |            |             | Electro-optical Data (At 20mA) |      |                  | Viewing Angle<br>2θ 1/2<br>(deg) |
|---------------|-----------------------------|--------------------|-------------------------|------------|------------|-------------|--------------------------------|------|------------------|----------------------------------|
| Emitted Color | Peak Wave Length<br>λ P(nm) |                    | Δ λ<br>(nm)             | Pd<br>(mW) | If<br>(mA) | Peak If(mA) | Vf(V)                          |      | Iv Typ.<br>(mcd) |                                  |
|               |                             |                    |                         |            |            |             | Typ.                           | Max. |                  |                                  |
| Orange        | 635                         | Orange Diffused    | 45                      | 80         | 30         | 150         | 2.0                            | 2.6  | 8.0              | 120                              |

Remark : Viewing angle is the Off-axis angle at which the luminous intensity is half the axial luminous intensity.

### ●ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

|                                   |                     |
|-----------------------------------|---------------------|
| Reverse Voltage .....             | 5V                  |
| Reverse Current (VR=5V) .....     | 100μA               |
| Operating Temperature Range ..... | -40°C ~ 80°C        |
| Storage Temperature Range .....   | -40°C ~ 85°C        |
| Lead Soldering Temperature .....  | 260°C For 5 Seconds |

### ●PACKAGE DIMENSIONS



NOTES: 1.All dimensions are in millimeters (inches).

2.Tolerance is ± 0.25mm (0.01”) unless otherwise specified.

3.Lead spacing is measured where the leads emerge from the package.

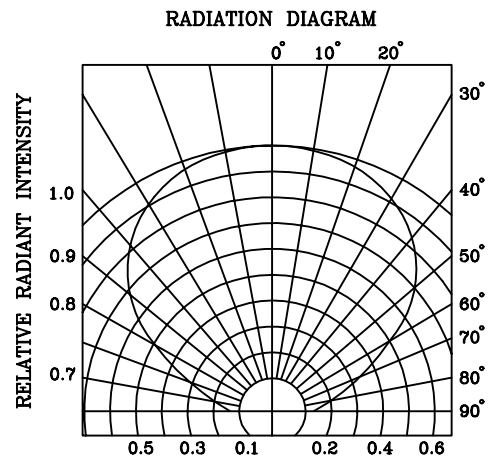
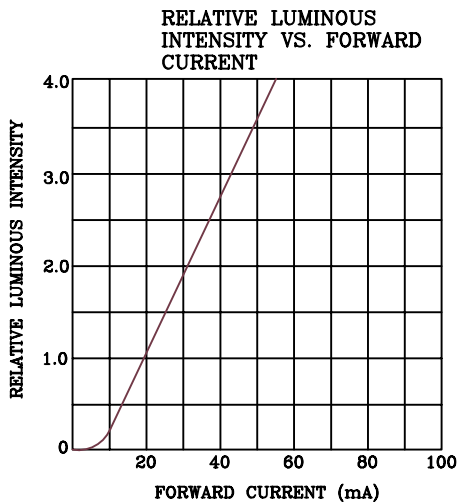
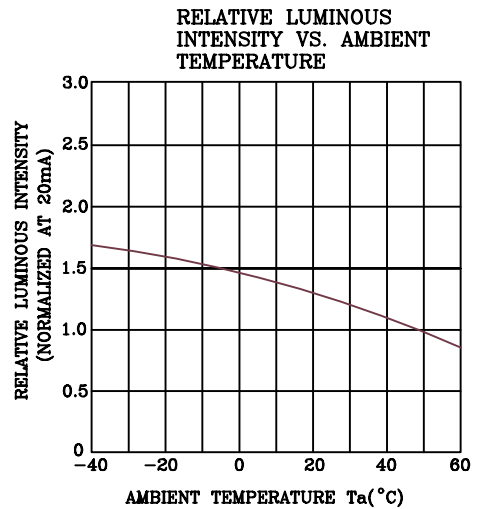
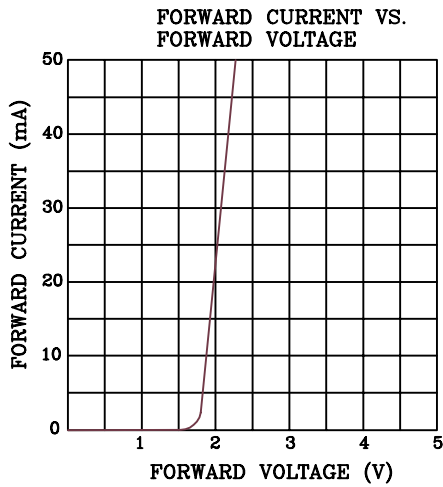
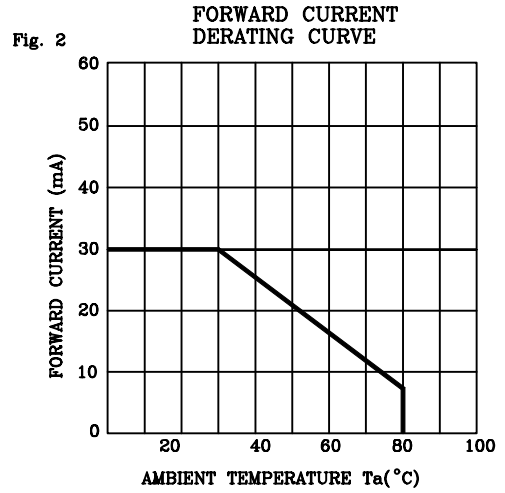
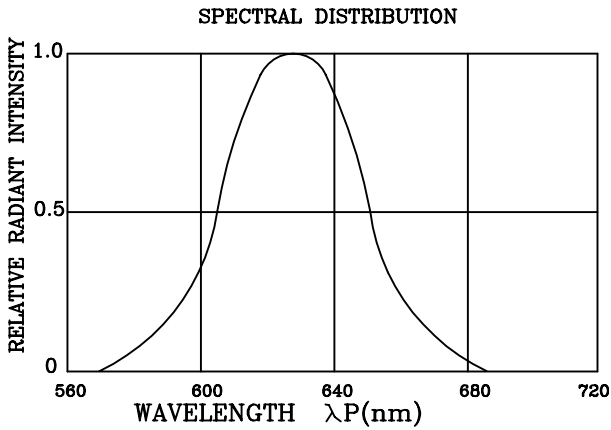
4.Specifications are subject to change without notice.

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## LED LAMPS SPECIFICATION

- COMMODITY: 3.6\*6.3\*6.8mm 1.0" Lead Rectangular
- DEVICE NUMBER: BL-R413P
- ELECTRICAL AND OPTICAL CHARACTERISTICS(Ta=25 °C)

PAGE: 3  
REVISION: 1.0



# BRIGHT LED ELECTRONICS CORP.

## LED LAMPS SPECIFICATION

### RELIABILITY TEST

PAGE: 4

REVISION: 1.0

| Classification     | Test Item                                    | Reference Standard  | Test Conditions  | Result |
|--------------------|--|---|--|--------|
| Endurance Test     | Operation Life                               | MIL-STD-750:1026<br>MIL-STD-883:1005<br>JIS C 7021 :B-1                     | Connect with a power $I_f=20\text{mA}$<br>$T_a$ =Under room temperature<br>Test time=1,000hrs  | 0/100  |
|                    | High Temperature<br>High Humidity<br>Storage | MIL-STD-202:103B<br>JIS C 7021 :B-11  | $T_a=85^\circ\text{C}\pm 5^\circ\text{C}$<br>RH=90%-95%<br>Test time=240hrs  | 0/100  |
|                    | High Temperature<br>Storage                  | MIL-STD-883:1008<br>JIS C 7021 :B-10  | High $T_a=105^\circ\text{C}\pm 5^\circ\text{C}$<br>Test time=1,000hrs  | 0/100  |
|                    | Low Temperature<br>Storage                   | JIS-C-7021 :B-12  | Low $T_a=-55^\circ\text{C}\pm 5^\circ\text{C}$<br>Test time=1,000hrs   | 0/100  |
| Environmental Test | Temperature Cycling                          | MIL-STD-202:107D<br>MIL-STD-750:1051<br>MIL-STD-883:1010<br>JIS C 7021 :A-4 | $-55^\circ\text{C} \sim 25^\circ\text{C} \sim 105^\circ\text{C} \sim 25^\circ\text{C}$<br>30min 5min 30min 5min<br>Test Time=10cycle | 0/100  |
|                    | Thermal Shock                                | MIL-STD-202:107D<br>MIL-STD-750:1051<br>MIL-STD-883:1011                    | $-55^\circ\text{C}\pm 5^\circ\text{C} \sim 105^\circ\text{C}\pm 5^\circ\text{C}$<br>10min 10min<br>Test Time=10cycle                 | 0/100  |
|                    | Solder Resistance                            | MIL-STD-202:201A<br>MIL-STD-750:2031<br>JIS C 7021 :A-1                     | $T_{\text{sol}}=260\pm 5^\circ\text{C}$<br>Dwell Time= $5\pm 1\text{sec.}$   | 0/50   |
|                    | Solder ability                               | MIL-STD-202:208D<br>MIL-STD-750:2026<br>MIL-STD-883:2003<br>JIS C 7021 :A-2 | $T_{\text{sol}}=230\pm 5^\circ\text{C}$<br>Dwell Time= $5\pm 1\text{sec.}$   | 0/50   |
|                    | Lead Bending Stress                          | MIL-STD-750:2036<br>JIS C 7021 :A-11  | $0^\circ\sim 90^\circ\sim 0^\circ\text{bend}$ , 3 cycles<br>Weight 250g  | 0/50   |

#### JUDGMENT CRITERIA OF FAILURE FOR THE RELIABILITY

| Measuring items    | Symbol | Measuring conditions | Judgement criteria for failure |
|--------------------|--------|----------------------|--------------------------------|
| Forward voltage    | $V_F$  | $I_f=20\text{mA}$    | Over $U_x1.2$                  |
| Reverse current    | $I_r$  | $V_r=5\text{V}$      | Over $U_x2$                    |
| Luminous intensity | $I_v$  | $I_f=20\text{mA}$    | Below $S_x0.5$                 |

Note: 1.U means the upper limit of specified characteristics. S means initial value.

2.Measurment shall be taken between 2 hours and after the test pieces have been returned to normal ambient conditions after completion of each test.

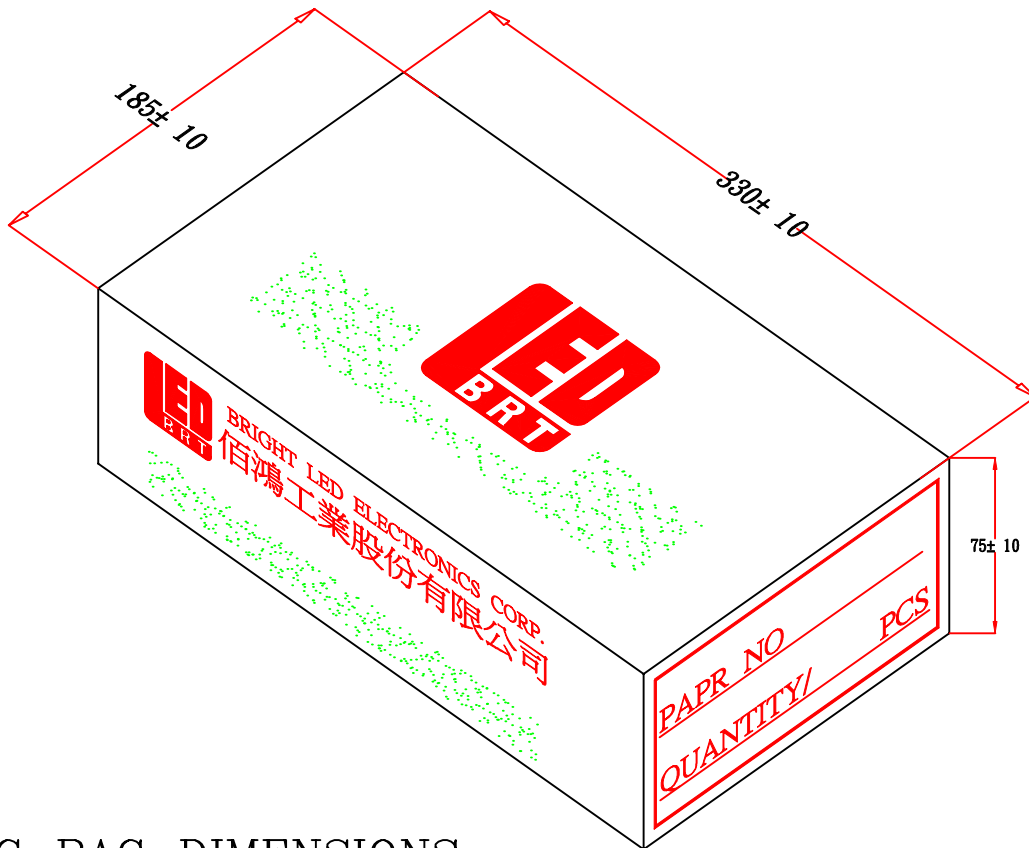
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## PACKAGING DIMMENSIONS

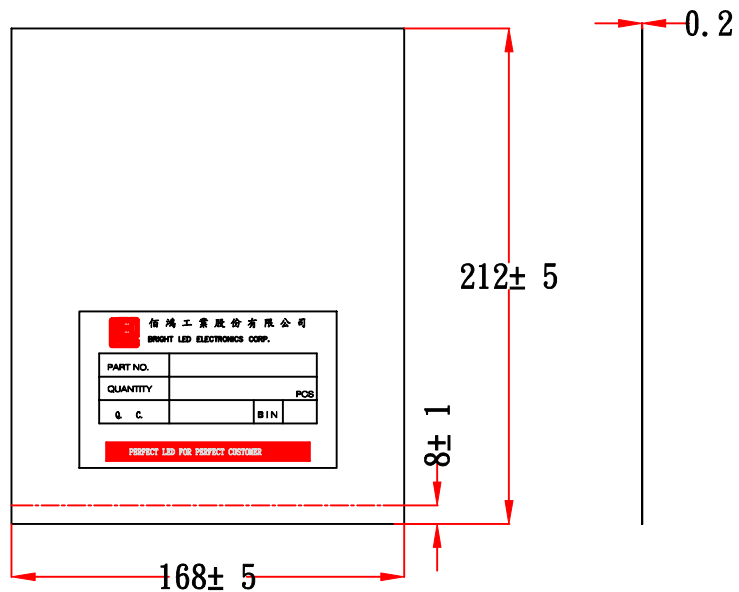
PAGE: 5

REVISION: 1.0

### PACKAGING BOX DIMENSIONS



### PACKAGING BAG DIMENSIONS



#### NOTES:

1. 500 PCS PER BAG, 5K PCS PER BOX
2. ALL Dimensions are in millimeters(inches).
3. Specifications are subject to change without notice.