# SPECIFICATION FOR COTCO LED LAMP

Document No: SPE/LC503THR1-30P-A
Model No : LC503THR1-30P-A
Rev. No: 03
Date: 2006-03-31

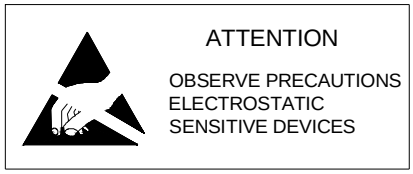
Description:

30 Degree 5mm LED Lamp in High Red Color with Water Transparent Lens and Stopper

Dice Material: AlGaInP

Confirmed by Customer: _____

Date: _____

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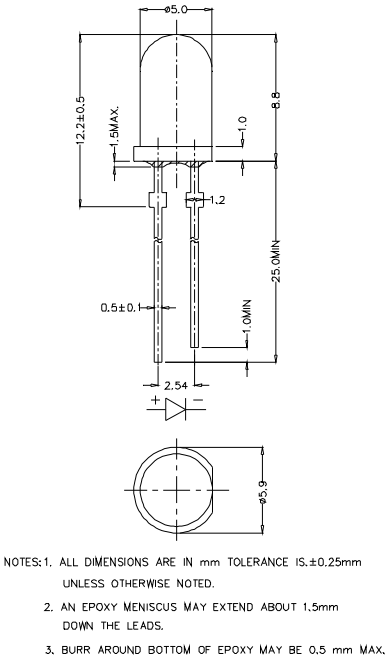
|---|---|
| Rev. No. | 03 |

**Applications:**

- Advertising Signs
- Indicators
- Traffic
- Automotive Lighting

**Dimension Drawing**




**Absolute Maximum Ratings at Ta = 25°C**

| Items | Symbol | Absolute maximum Rating | Unit |
|---|---|---|---|
| Forward Current*2 | $I_F$ | 50 | mA |
| Peak Forward Current*1 | $I_{FP}$ | 200 | mA |
| Reverse Voltage | $V_R$ | 5 | V |
| Power Dissipation | $P_D$ | 130 | mW |
| Operation Temperature | $T_{opr}$ | -40 ~ + 95 | °C |
| Storage Temperature | $T_{stg}$ | -40 ~ +100 | °C |
| Lead Soldering Temperature | $T_{sol}$ | Max.260°C for 3 sec Max. (3mm from the base of the epoxy bulb) | |

*1 pulse width <=0.1msec duty <=1/10

*2 For long term performance the drive currents between 10mA and 30mA are recommended. Please contact COTCO sales representative for more information on recommended drive conditions.

**Typical Electrical & Optical Characteristics ( Ta = 25°C)**

| Items | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Forward Voltage | $V_F$ | $I_F$ = 20mA | --- | 2.3 | 2.6 | V |
| Reverse Current | $I_R$ | $V_R$ = 5V | --- | --- | 100 | μA |
| Dominant Wavelength | $\lambda_D$ | $I_F$ = 20mA | 620 | 628 | 635 | nm |
| Luminous Intensity | $I_V$ | $I_F$ = 20mA | 2130 | 3300 | --- | mcd |
| 50% Power Angle | $2\theta_{1/2}$ | $I_F$ = 20mA | --- | 30 | --- | deg |

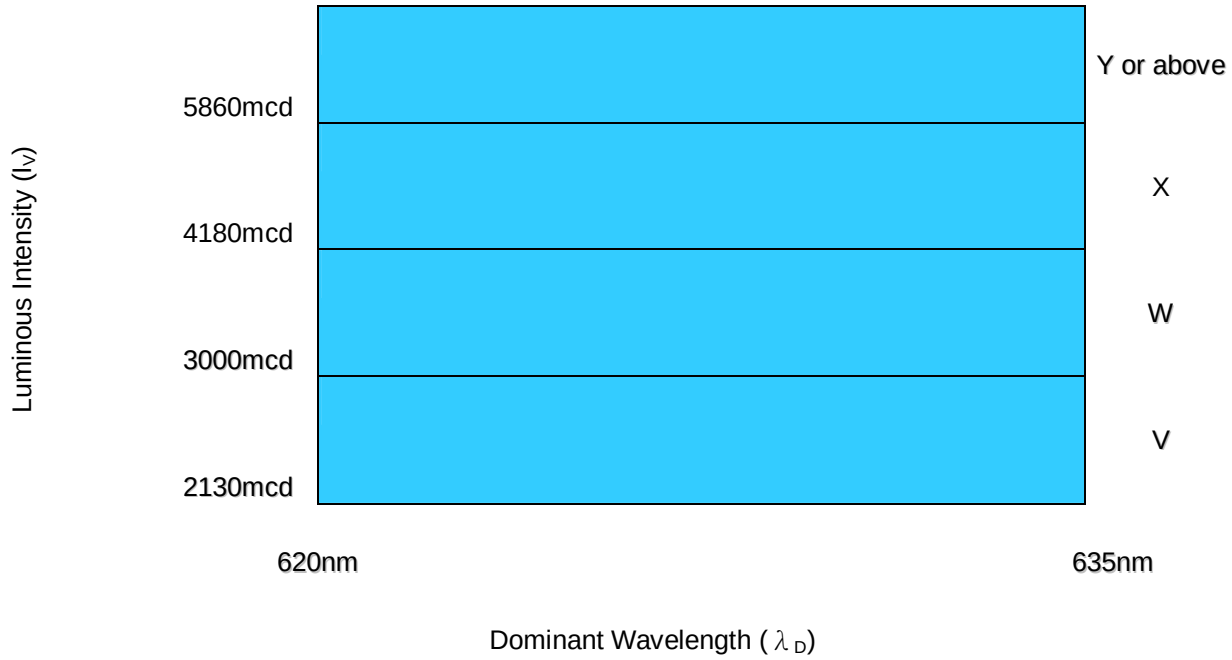
**Standard bins for LC503THR1-30P-A ($I_F$ = 20mA):**

Lamps are sorted to Luminous Intensity –$I_V$& Dominant Wavelength – $\lambda_D$ bins shown.

Orders for LC503THR1-30P-A may be filled with any or all bins contained as below.

All Luminous Intensity –$I_V$ & Dominant Wavelength – $\lambda_D$ values shown and specified are at $I_F$ =20mA.

*** V+**




* V+ indicates Luminous Intensity is at V bin or above.

**Important Notes:**

1) All ranks will be included per delivery; rank ratio will be based on the Dices distribution.

2) Pb content <1000PPM.

3) Tolerance of measurement of luminous intensity is ±15%.

4) Tolerance of measurement of dominant wavelength is ±1nm.

5) Tolerance of measurement of Vf is ±0.05 V.

6) Packaging methods are available for selection, Please refer to PACKAGING STANDARD.

7) Please refer to LED LAMP RELIABILITY TEST STANDARD for reliability test conditions.

8) Please refer to APPLICATION NOTES for Application.

## Graphs

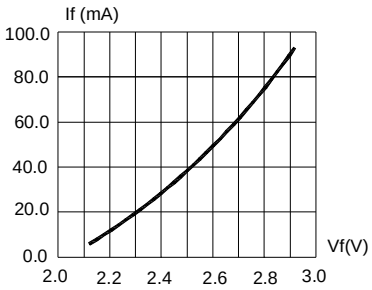



FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

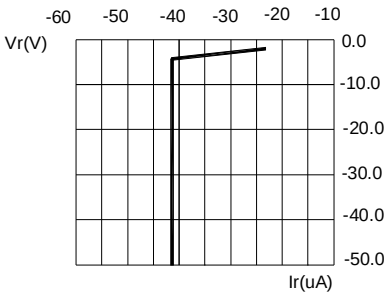



FIG.2 REVERSE CURRENT VS. REVERSE VOLTAGE.

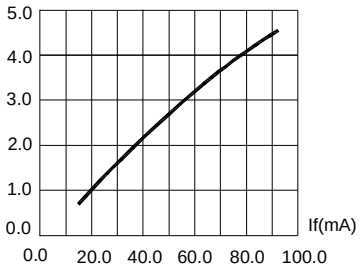



FIG.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT.

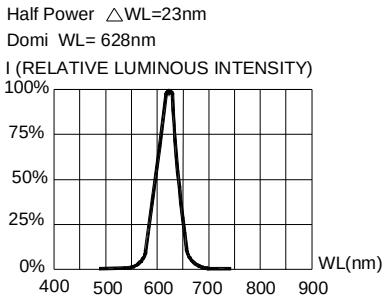



FIG.4 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH.

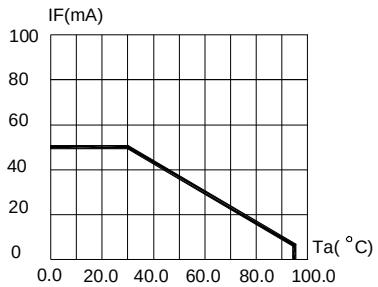



FIG.5 MAXIMUM FORWARD DC CURRENT VS AMBIENT TEMPERATURE (Tjmax=105° C)

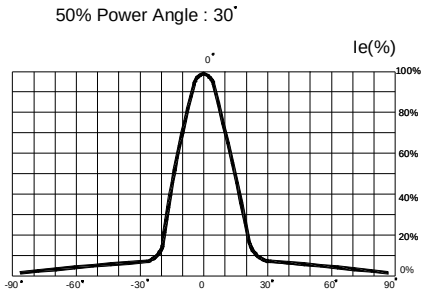



FIG.6 FAR FIELD PATTERN

| Items | Signatures | Date |
|---|---|---|
| Prepared by | LiuZM | 2006-03-31 |
| Checked by | Aldosin | 2006-03-31 |
| Approved by | David | 2006-03-31 |
| FCN# | FCN20060081 | |

| Revision History | | |
|---|---|---|
| Rev. No | Date | Change Description |
| B | 03Aug04 | Add ESD and Notes; Change FIG.1&3&5; Change IV & $\lambda_D$ Rank form. |
| 03 | 2006-03-31 | Cancel VF bin. |
| | | |