

### ELUA3535NU6 4W Series



#### Introduction

The ELUA3535NU6 product series is a ceramic based LED with high quality and reliability that suitable for UV application.

#### Features

- ◆ High power UVA LED
- ◆ Dimension 3.75mm\* 3.75mm\* 2.6mm
- ◆ ESD protection up to 2KV
- ◆ RoHS compliant
- ◆ Pb free
- ◆ EU REACH compliant
- ◆ Halogen Free compliant  
(Br<900ppm, Cl<900ppm, Br+Cl<1500ppm)

#### Applications

- ◆ UV Sterilization System
- ◆ UV Photo-catalyst
- ◆ UV Sensor Light

## Product Nomenclature

# ELUA3535NU6-PXXXXYY36481K0-V41G

EL = Everlight

UA = UVA

3535 = 3.75mm x 3.75mm Package

N = Package Material: AlN

U = Coating: Au

6 = Angle: 60°

P = Peak Wavelength

XXXX = Wavelength Range [1]

YY = Minimum Radiant Flux

3648 = Forward Voltage Spec: 3.6~4.8V

1K0= Forward Current: 1000mA

700= Forward Current: 700 mA (Only 365nm)

V = Chip Type: Vertical

4 = Chip Size: 43mil

1 = Chip QTY: 1 chip

G = Process Type: Quartz Glass

## Notes:

### 1. Wavelength Range

| Symbol | Description |
|--------|-------------|
| 6070   | 360~370nm   |
| 8090   | 380~390nm   |
| 9000   | 390~400nm   |
| 0010   | 400~410nm   |

## Absolute Maximum Ratings

| Parameter                                               | Symbol    | Ratings    | Unit |
|---------------------------------------------------------|-----------|------------|------|
| Max. DC Forward Current (mA)<br>(For 385nm、395nm、405nm) | $I_F$     | 1250       | mA   |
| Max. DC Forward Current (mA)(Only 365nm)                | $I_F$     | 700        | mA   |
| Max. ESD Resistance                                     | $V_B$     | 2000       | V    |
| Thermal Resistance                                      | $R_{th}$  | 4          | °C/W |
| Max. Junction Temperature                               | $T_J$     | 105        | °C   |
| Operating Temperature                                   | $T_{Opr}$ | -10 ~ +100 | °C   |
| Storage Temperature                                     | $T_{Stg}$ | -40 ~ +100 | °C   |

## PN of the ELUA3535NU6 series: UVA LEDs

| Order Code of ELUA3535NU6        | Minimum<br>Radiant<br>Flux(mW) | Typical<br>Radiant<br>Flux (mW) | Maximum<br>Radiant<br>Flux (mW) | Peak<br>Wavelength<br>(nm) | Forward<br>Voltage<br>(V) | Forward<br>Current<br>(mA) |
|----------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------|---------------------------|----------------------------|
| ELUA3535NU6-P6070U23648700-V41G  | 900                            | 1300                            | 1600                            | 360~370                    | 3.6~4.8                   | 700                        |
| ELUA3535NU6-P8090U5136481K0-V41G | 1350                           | 1475                            | 1850                            | 380~390                    | 3.6~4.8                   | 1000                       |
| ELUA3535NU6-P9000U5136481K0-V41G | 1350                           | 1475                            | 1850                            | 390~400                    | 3.6~4.8                   | 1000                       |
| ELUA3535NU6-P0010U5136481K0-V41G | 1350                           | 1475                            | 1850                            | 400~410                    | 3.6~4.8                   | 1000                       |

## Product Binning

### Radiant Flux Bins

| 365 Bin Code | Minimum Radiant Flux (mW) | Maximum Radiant Flux (mW) |
|--------------|---------------------------|---------------------------|
| U1           | 900                       | 1000                      |
| U2           | 1000                      | 1200                      |
| U3           | 1200                      | 1400                      |
| U4           | 1400                      | 1600                      |

| 385-405 Bin Code | Minimum Radiant Flux (mW) | Maximum Radiant Flux (mW) |
|------------------|---------------------------|---------------------------|
| U51              | 1350                      | 1600                      |
| U52              | 1600                      | 1850                      |

#### Notes:

1. Radiant flux measurement tolerance:  $\pm 10\%$ .
2. Forward voltage bins are defined at  $I_F=1000\text{mA}$  operation. (For 385nm 、395nm 、405nm)
3. Forward voltage bins are defined at  $I_F=700\text{mA}$  operation. (For 365nm)

### Peak Wavelength Bins

| Bin | Minimum Peak Wavelength (nm) | Maximum Peak Wavelength (nm) |
|-----|------------------------------|------------------------------|
| U36 | 360                          | 370                          |
| U38 | 380                          | 390                          |
| U39 | 390                          | 400                          |
| U40 | 400                          | 410                          |

#### Notes:

1. Peak Wavelength measurement tolerance:  $\pm 1\text{nm}$ .
2. Forward voltage bins are defined at  $I_F=1000\text{mA}$  operation. (For 385nm 、395nm 、405nm)
3. Forward voltage bins are defined at  $I_F=700\text{mA}$  operation. (For 365nm)
- 4.

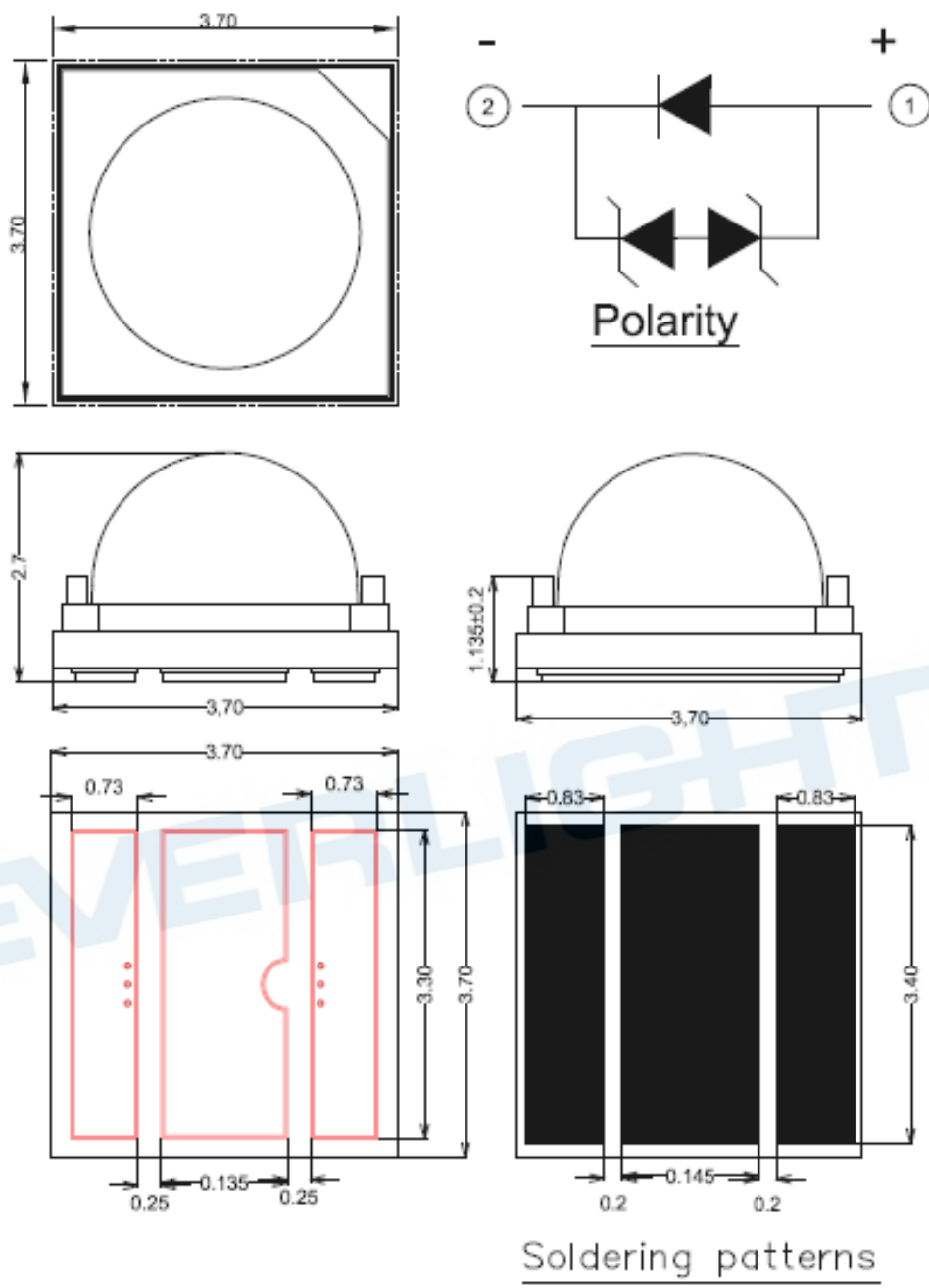
### Forward Voltage Bins

| Bin  | Minimum Forward Voltage (V) | Maximum Forward Voltage (V) |
|------|-----------------------------|-----------------------------|
| 3640 | 3.6                         | 4.0                         |
| 4044 | 4.0                         | 4.4                         |
| 4448 | 4.4                         | 4.8                         |

#### Notes:

1. Forward voltage measurement tolerance:  $\pm 2\%$ .
2. Forward voltage bins are defined at  $I_F=1000\text{mA}$  operation. (For 385nm 、395nm 、405nm)
3. Forward voltage bins are defined at  $I_F=700\text{mA}$  operation. (For 365nm)

## Mechanical Dimension



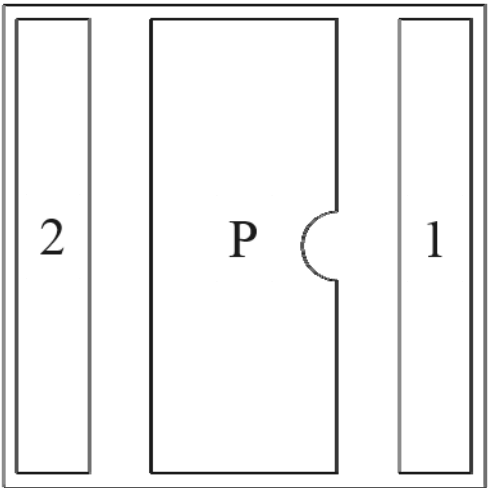
1. Dimensions are in millimeters.

1. General tolerance:  $\pm 0.1$  mm

2. Thickness tolerance:  $\pm 0.15$  mm

Unit : mm

Pad Configuration

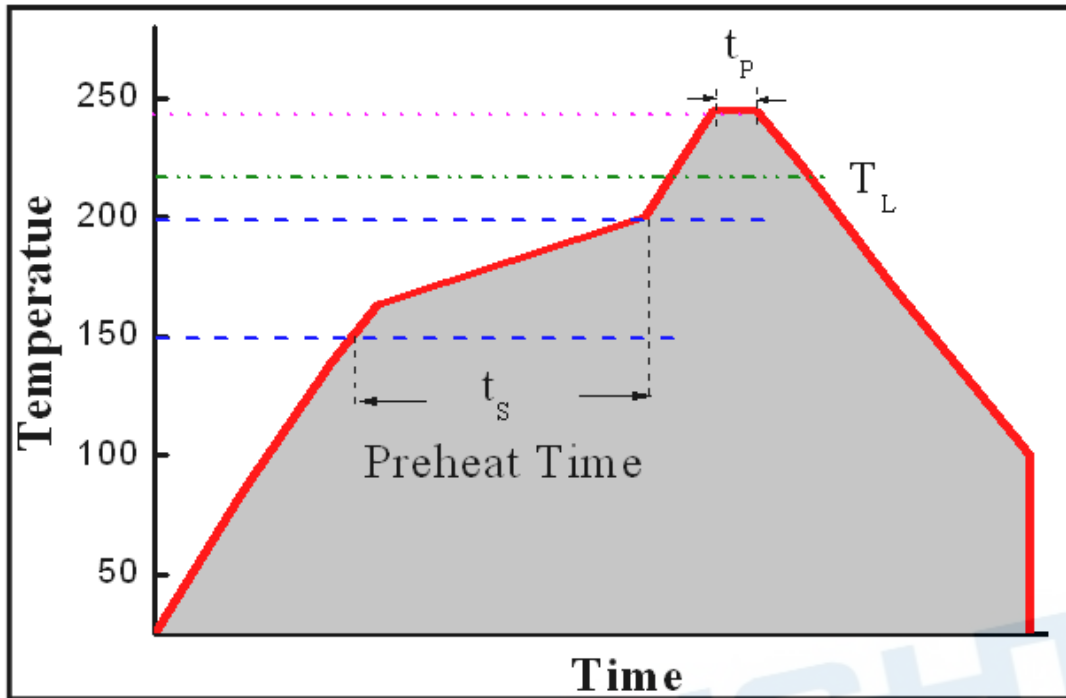


BOTTOM VIEW

| PAD | FUNCTION    |
|-----|-------------|
| 1   | ANODE       |
| 2   | CATHODE     |
| P   | THERMAL PAD |

**For Reflow Process**

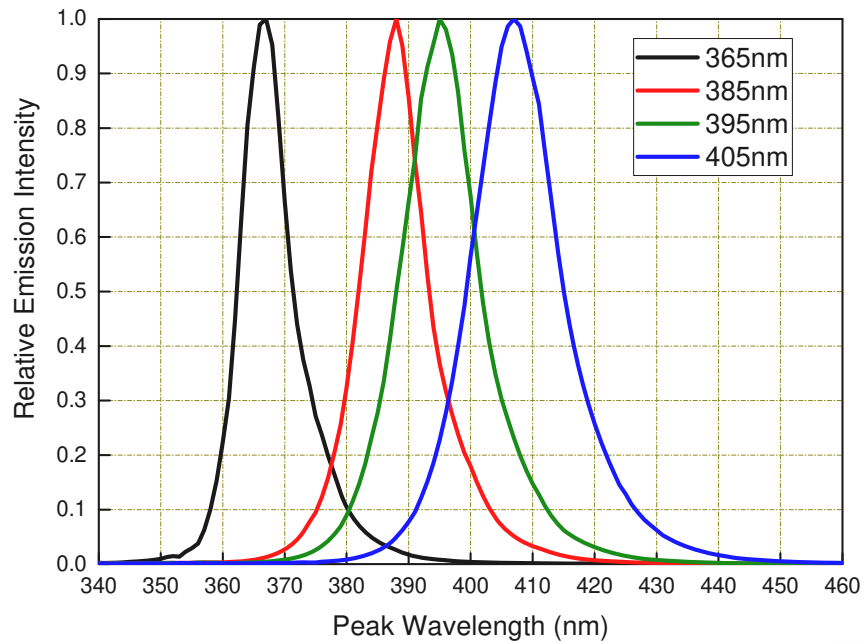
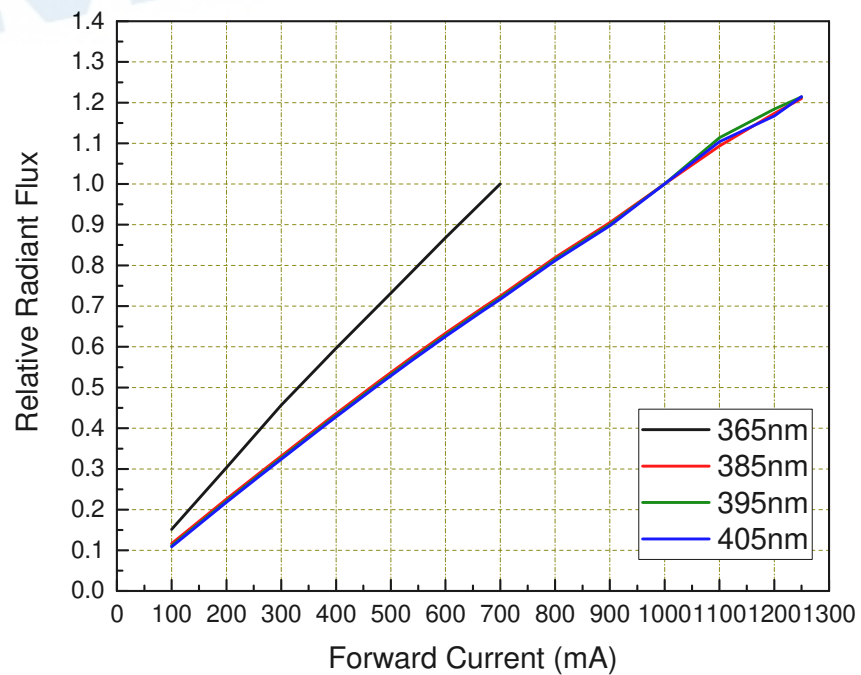
- ELUA series are suitable for SMT processes.
- Curing of glue in oven must be according to standard operation flow processes.



| Profile Feature              | Lead Free Assembly |
|------------------------------|--------------------|
| Ramp-Up Rate                 | 2-3 °C/S           |
| Preheat Temperature          | 150-200 °C         |
| Preheat Time ( $t_s$ )       | 60-120 S           |
| Liquid Temperature ( $T_L$ ) | 217 °C             |
| Time maintained above $T_L$  | 60-90 S            |
| Peak Temperature ( $T_p$ )   | 240±5 °C           |
| Peak Time ( $t_p$ )          | Max 20 S           |
| Ramp-Down Rate               | 3-5 °C/S           |

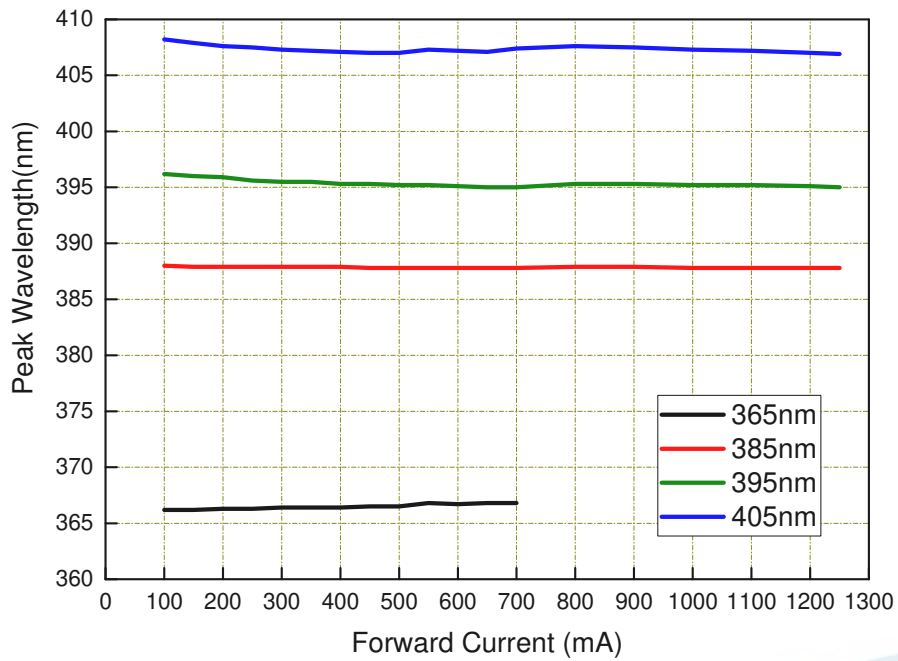
- Reflow soldering should not be done more than twice.
- In soldering process, stress on the LEDs during heating should be avoided.
- After soldering, do not bend the circuit board.

**Typical Characteristics Curves**

**Spectrum @ Thermal Pad Temperature = 25°C****Relative Radiant Flux vs. Forward Current  
@ Thermal Pad Temperature = 25°C**

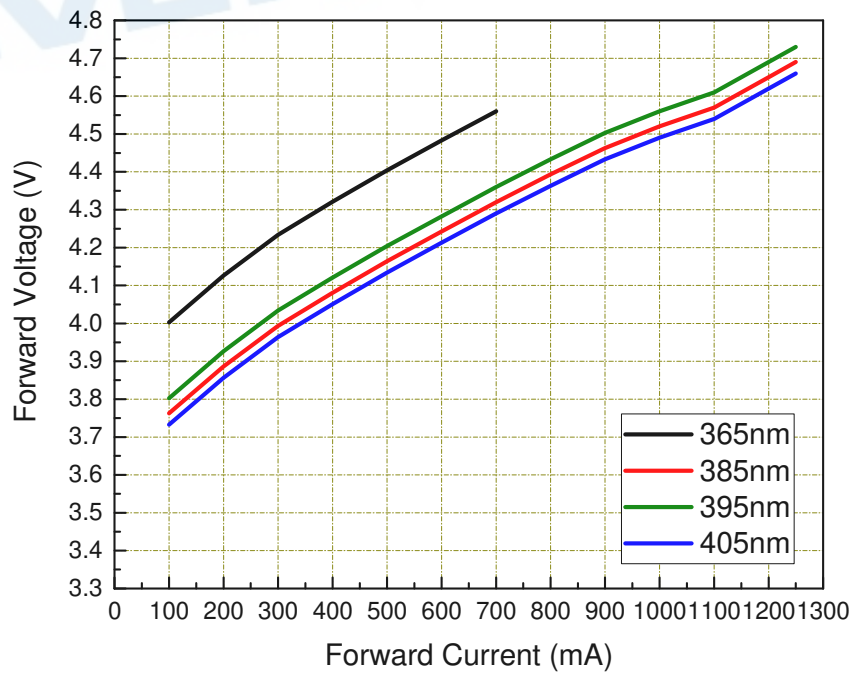


@ Thermal Pad Temperature = 25°C



Forward Voltage vs. Forward Current

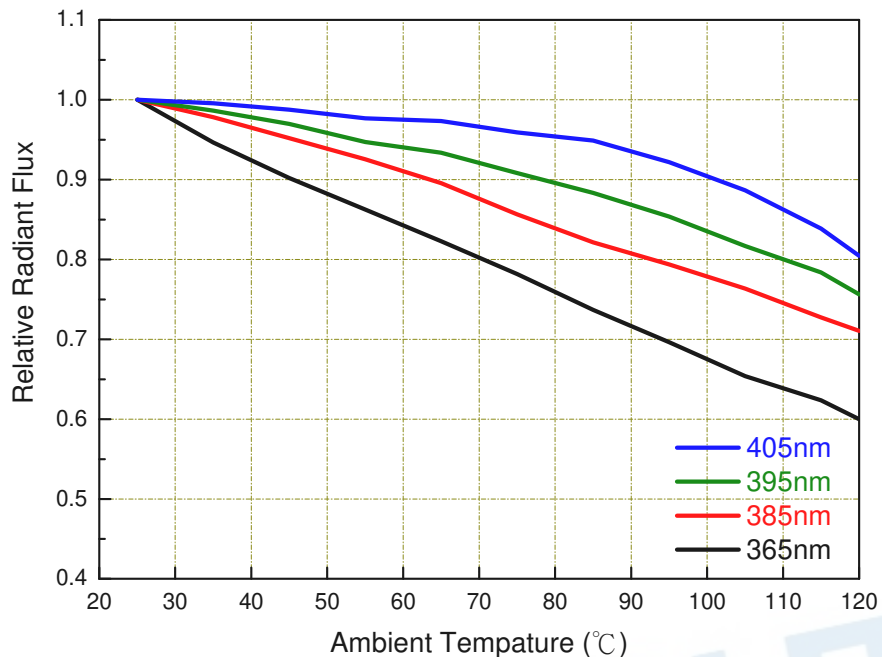
@ Thermal Pad Temperature = 25°C



Relative Radiant Flux vs. Ambient Temperature

@ Forward Current = 1000mA (For 385nm 、395nm 、405nm)

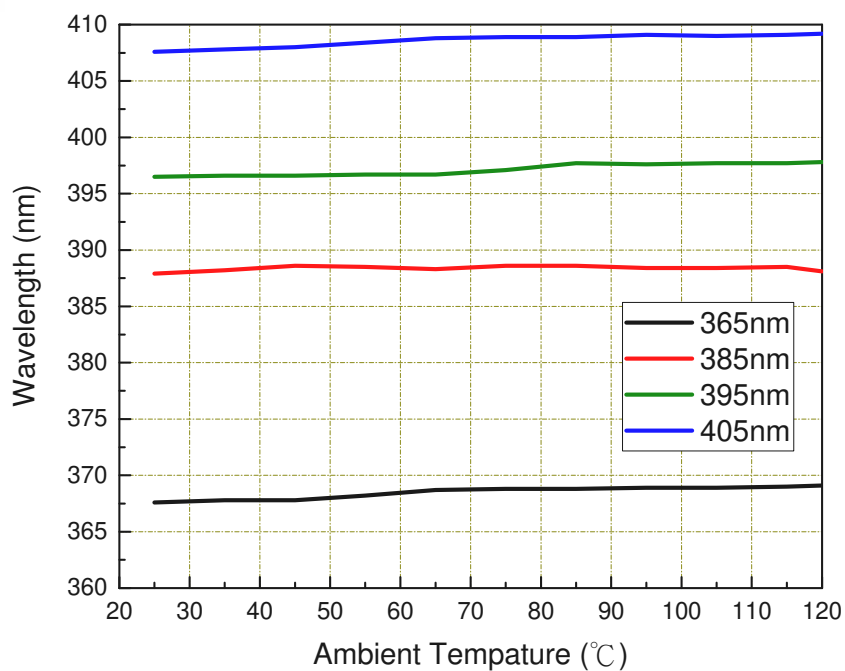
@ Forward Current = 700mA (For 365nm)



### Peak Wavelength vs. Ambient Temperature

@ Forward Current = 1000mA (For 385nm 、395nm 、405nm)

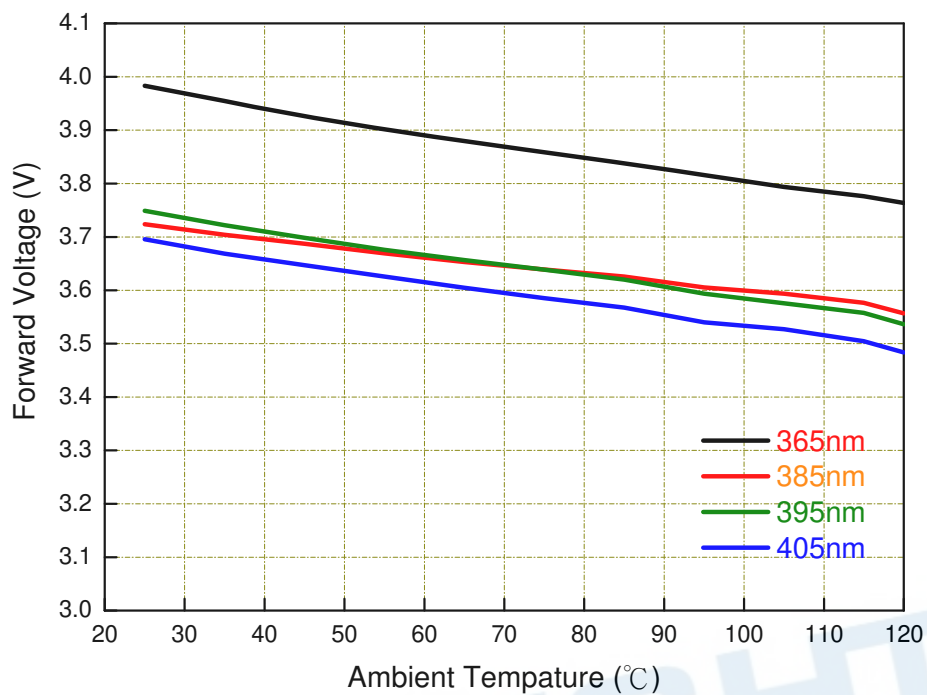
@ Forward Current = 700mA (For 365nm)



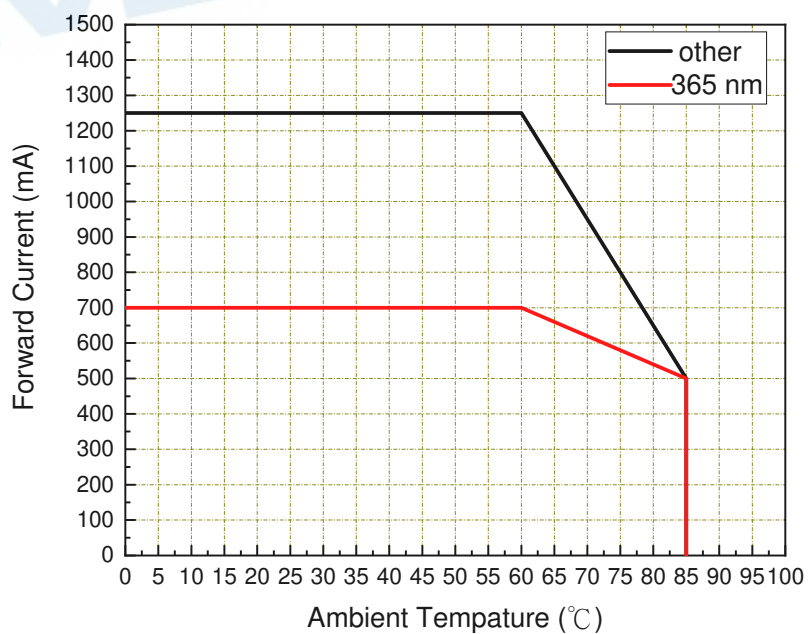
Forward Voltage vs. Ambient Temperature

@ Forward Current = 1000mA (For 385nm 、395nm 、405nm)

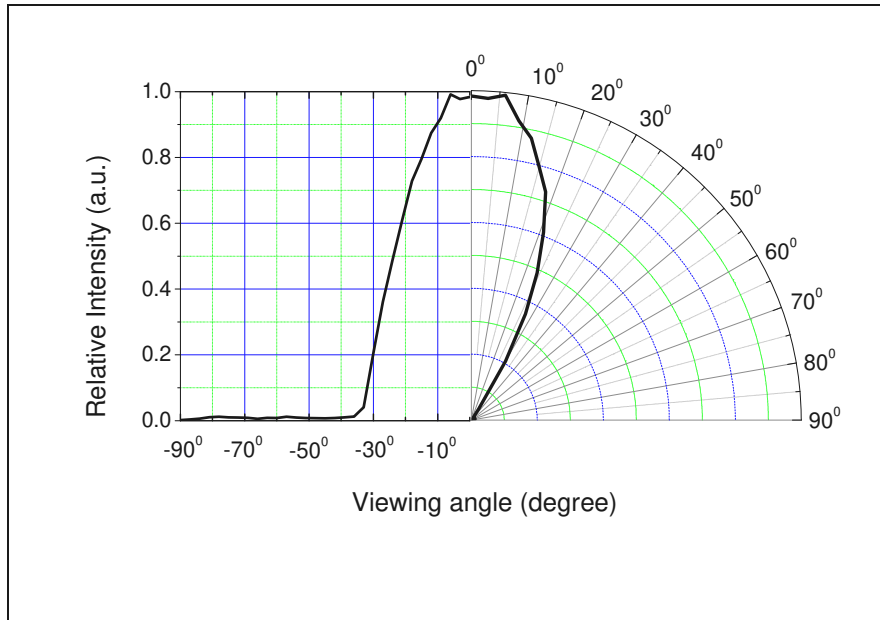
@ Forward Current = 700mA (For 365nm)



Derating Curve



## Typical Diagram Characteristics of Radiation for ELUA3535NU6



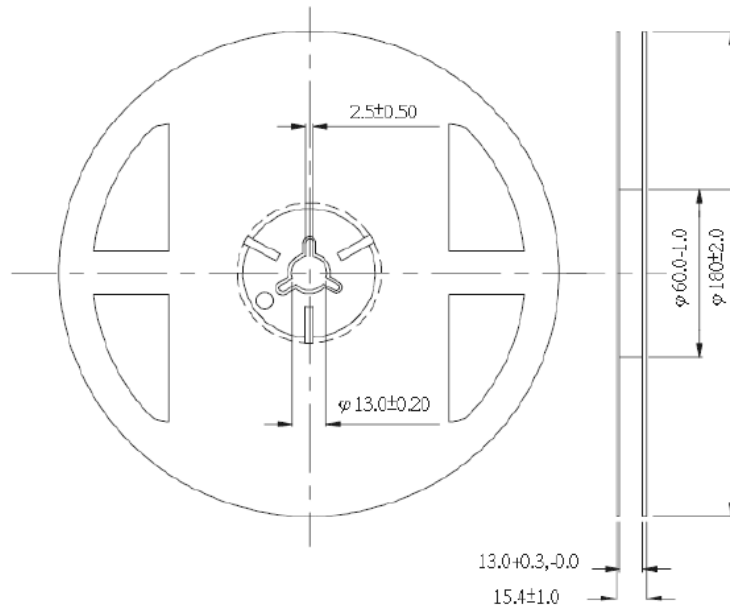
### Notes:

1.  $2\theta_{1/2}$  is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.
2. View angle tolerance is  $\pm 5^\circ$ .



## Emitter Reel Packaging

### Reel Dimensions



#### Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are  $\pm 0.1\text{mm}$ .

### Label Explanation

CPN: Customer Specification (when required)

P/N : Everlight Production Number

QTY: Packing Quantity

CAT: Luminous Flux (Brightness) Bin

HUE: Color Bin

REF: Forward Voltage Bin

LOT No: Lot Number

MADE IN TAIWAN: Production Place

### Product Labeling

|                                                    |    |           |   |
|----------------------------------------------------|----|-----------|---|
| RoHS                                               | Pb | EVERLIGHT | 5 |
| CPN : XXXXXXXXXXXXXXXXXXXX                         |    |           |   |
| XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX |    |           |   |
| P/N : XXXXXXXXXXXX                                 |    |           |   |
| XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX |    |           |   |
| LOT NO: Y150716XXX-XXXXXXXXXX-XXXXXXXXXX           |    |           |   |
| QTY: 0123456789 HUE: XXXXXXXXXXXX                  |    |           |   |
| CAT: XXXXXXXXXXXX REF: XXXXXXXXXXXX                |    |           |   |
| REFERENCE: BTPYYMDDXXXXX                           |    |           |   |
| MSL-X MADE IN XXXXXX                               |    |           |   |



## Storage Conditions

- Before the package is opened :The LEDs should be stored at 30°C or less and 85%RH or less after being shipped from Everlight and the storage life limits are 1 year. The LEDs can be stored up to 3 years if in a sealed container with a nitrogen atmosphere and moisture absorbent material.
- After opening the package: The LED's floor life is 168 hours under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.
- If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment: 60±5°C for 24 hours.

## DISCLAIMER

- EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
- The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
- The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
- When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
- These specification sheets include materials protected under copyright of EVERLIGHT. Reproduction in any form is prohibited without obtaining EVERLIGHT's prior consent.
- This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or life saving applications or any other application which can result in human injury or death. Please contact authorized EVERLIGHT sales agent for special application request.
- **Do not soaked in organic material, avoid peeling off the film on the reflector.**
- **Temperature cannot exceed 300 degrees Celsius, avoid peeling off the film on the reflector.**
- **The product is not suitable for use in an ammonia environment.**