

# EVERLIGHT

## DATASHEET

### ELUA3535NU3 4W Series

#### Introduction



The ELUA3535NU3 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\* 3.2mm
- ◆ 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

# ELUA3535NU3-PXXXXYY36481K0-V41G

EL = Everlight

UA = UVA

3535 = 3.75mm x 3.75mm Package

N = Package Material: AlN

U = Coating: Au

3 = Angle: 30°

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) (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 ELUA3535NU3 series: UVA LEDs

Order Code of ELUA3535NU6	Minimum Radiant Flux(mW)	Typical Radiant Flux (mW)	Maximum Radiant Flux (mW)	Peak Wavelength (nm)	Forward Voltage (V)	Forward Current (mA)
ELUA3535NU3-P6070U23648700-V41G	900	1300	1600	360~370	3.6~4.8	700
ELUA3535NU3-P8090U5136481K0-V41G	1350	1475	1850	380~390	3.6~4.8	1000
ELUA3535NU3-P9000U5136481K0-V41G	1350	1475	1850	390~400	3.6~4.8	1000
ELUA3535NU3-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 Code	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)

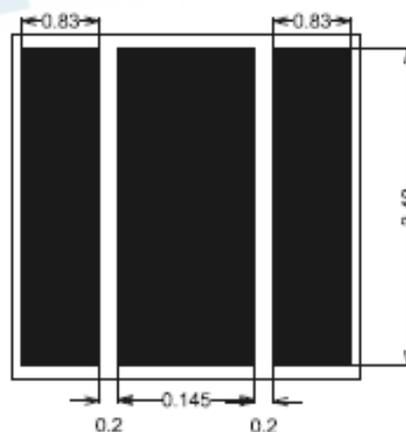
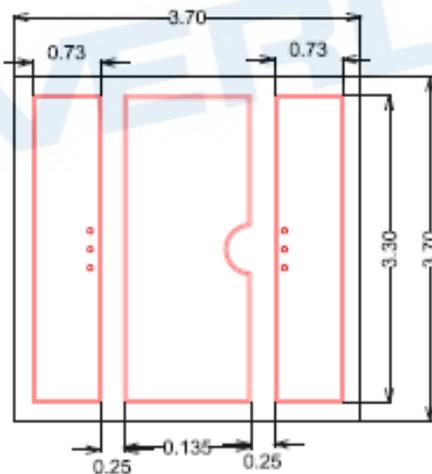
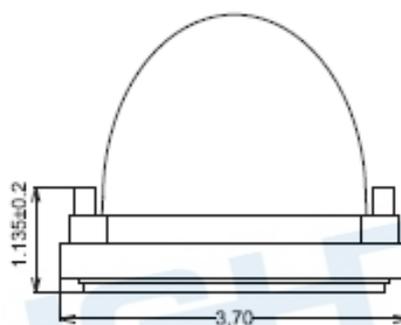
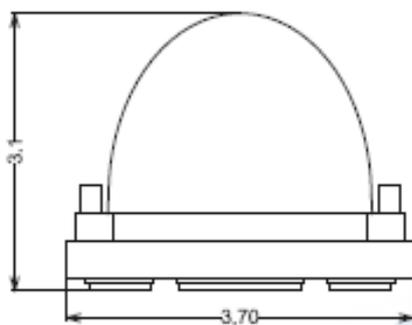
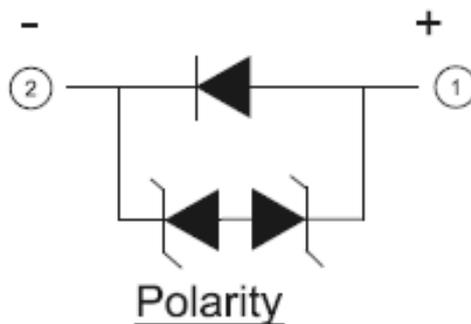
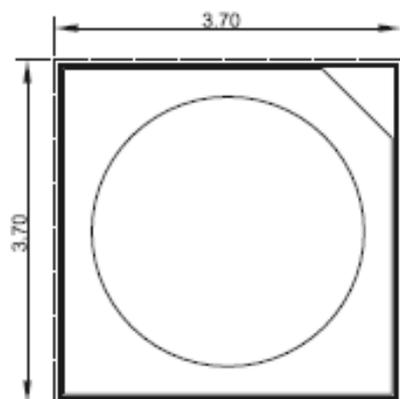
## Forward Voltage Bins

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



Soldering patterns

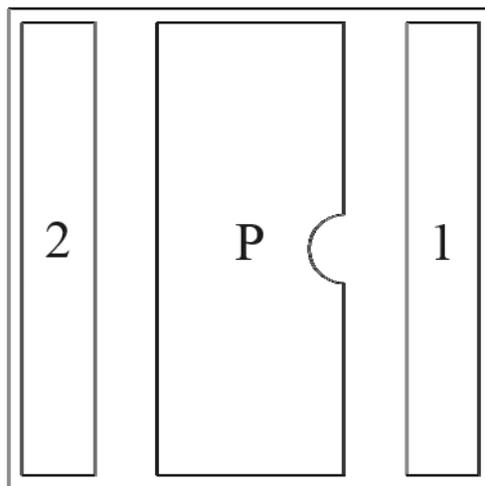
1. Dimensions are in millimeters.

2. General tolerance:  $\pm 0.1\text{mm}$

3. Thickness tolerance:  $\pm 0.15\text{mm}$

Unit : mm

## Pad Configuration



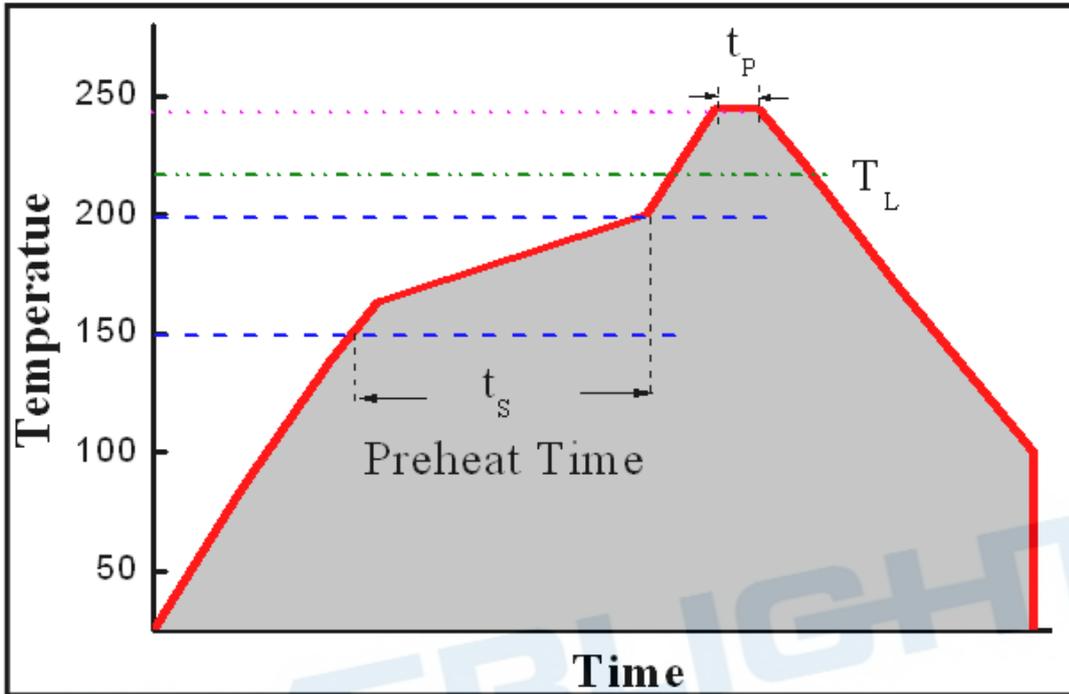
BOTTOM VIEW

PAD	FUNCTION
1	ANODE
2	CATHODE
P	THERMAL PAD

## Reflow Soldering Characteristics

### For Reflow Process

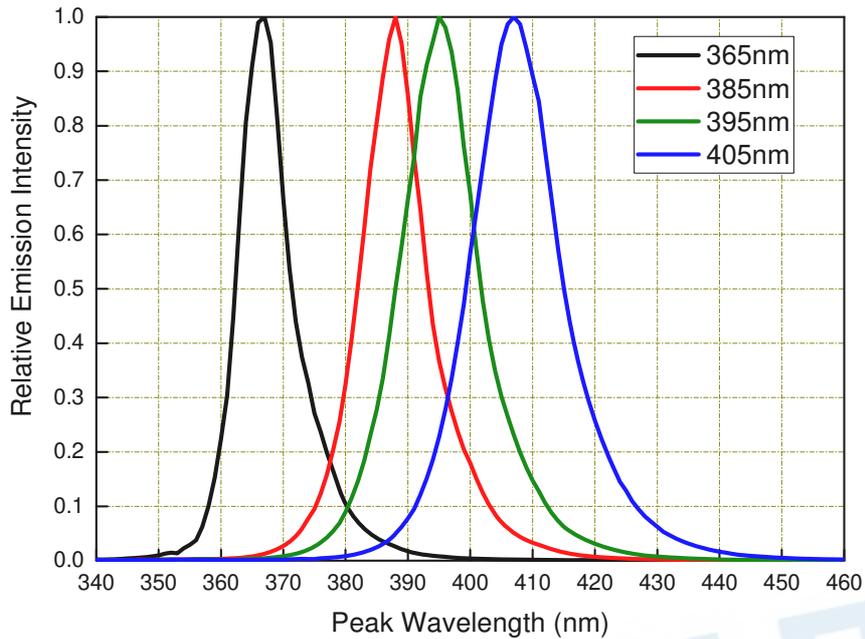
- ELUA series are suitable for SMT processes.
- Curing of glue in oven must be according to standard operation flow processes.



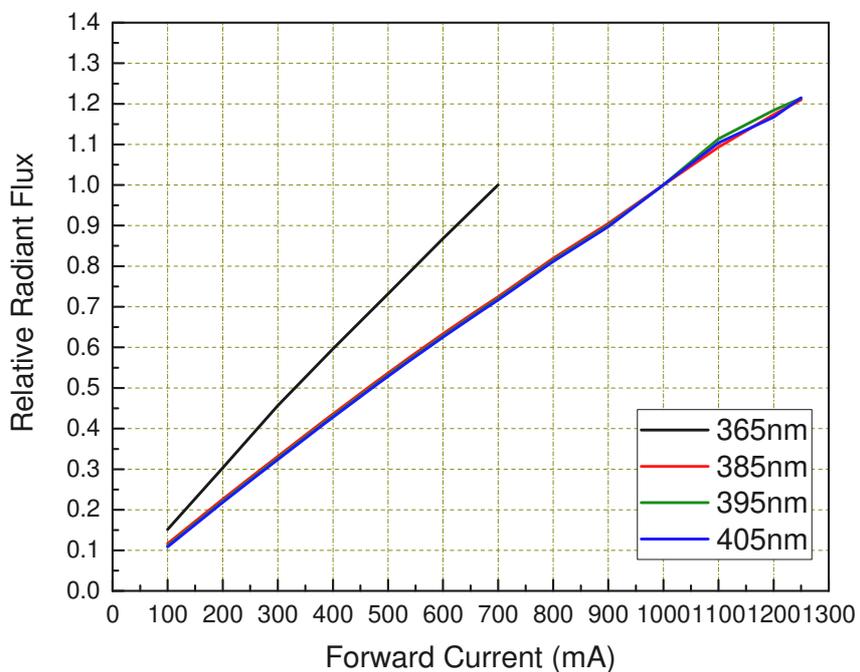
Profile Feature	Lead Free Assembly
Ramp-Up Rate	2-3 °C/S
Preheat Temperature	150-200 °C
Preheat Time ( $t_s$ )	60-120 S
Liquid Temperature ( $T_L$ )	217 °C
Time maintained above $T_L$	60-90 S
Peak Temperature ( $T_p$ )	240±5 °C
Peak Time ( $t_p$ )	Max 20 S
Ramp-Down Rate	3-5 °C/S

- 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.

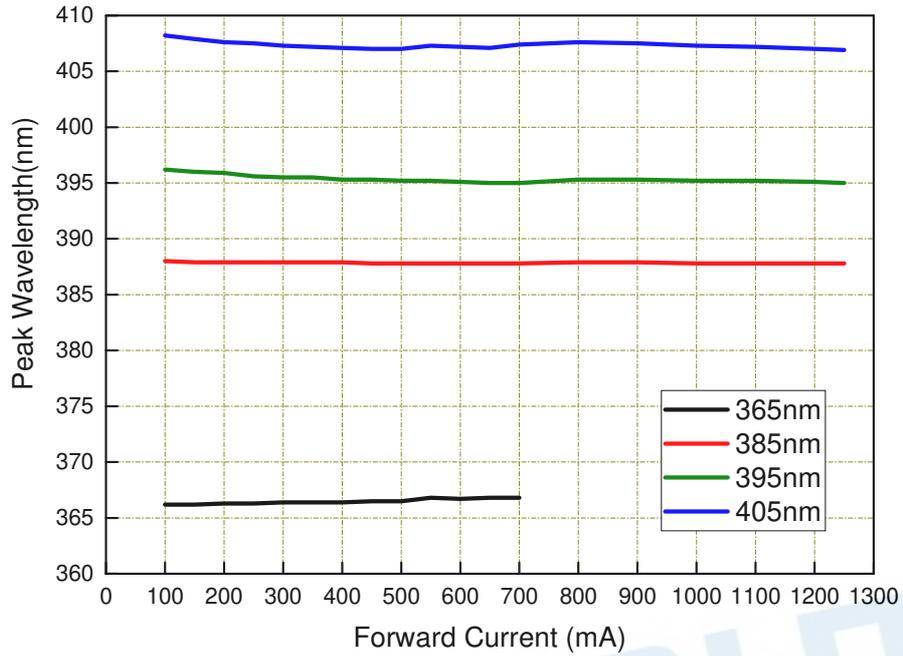
### Typical Characteristics Curves Spectrum @ Thermal Pad Temperature = 25°C



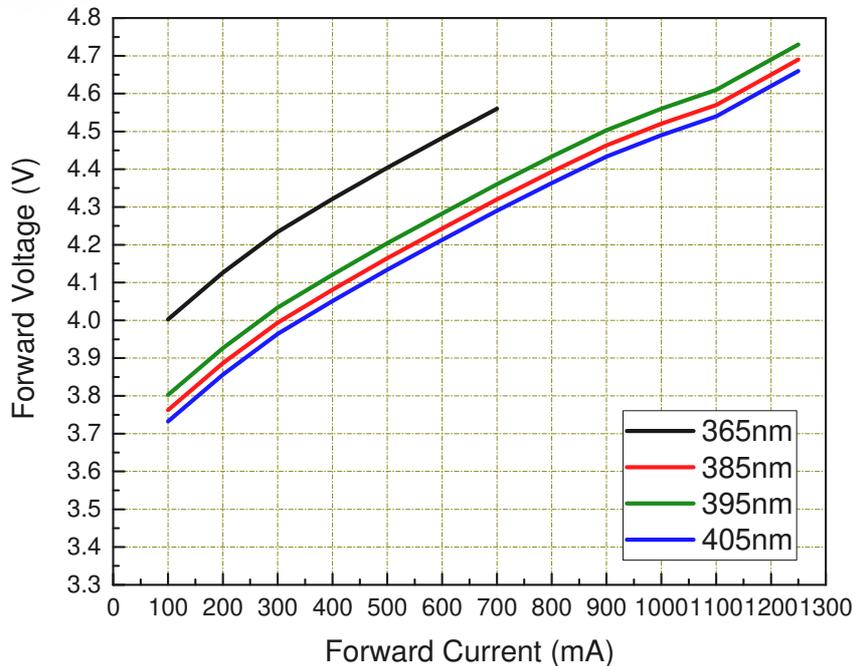
### Relative Radiant Flux vs. Forward Current @ Thermal Pad Temperature = 25°C



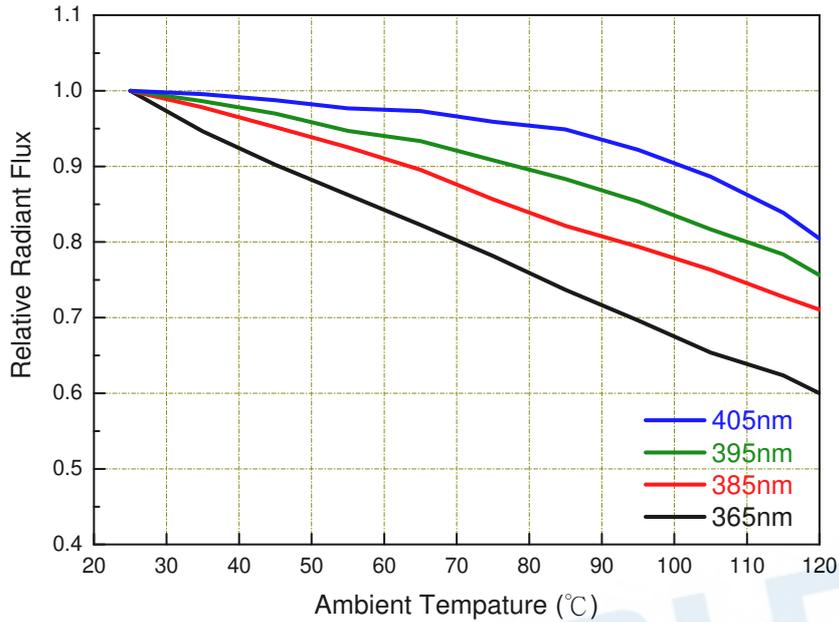
### Peak Wavelength vs. Forward Current @ Thermal Pad Temperature = 25°C



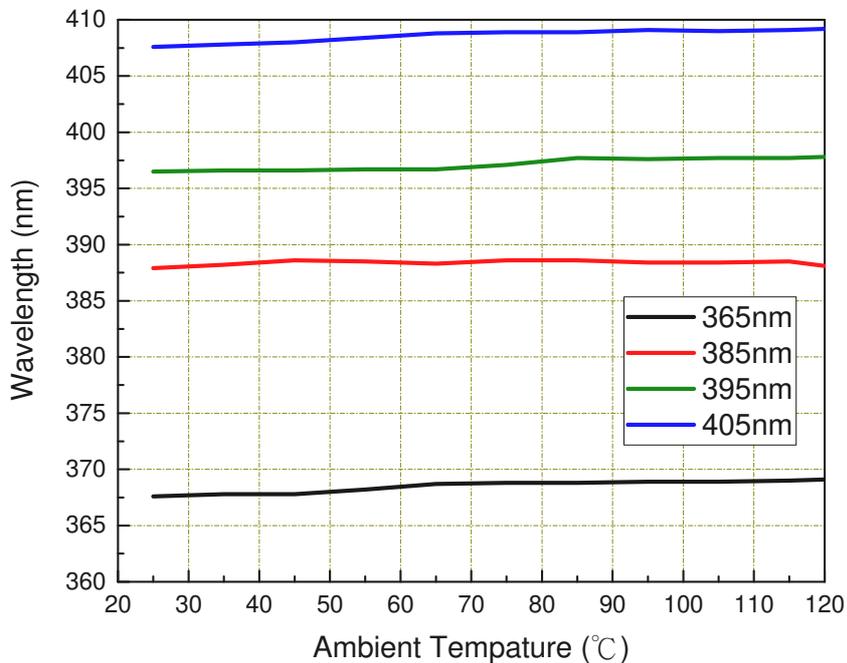
### Forward Voltage vs. Forward Current @ Thermal Pad Temperature = 25°C



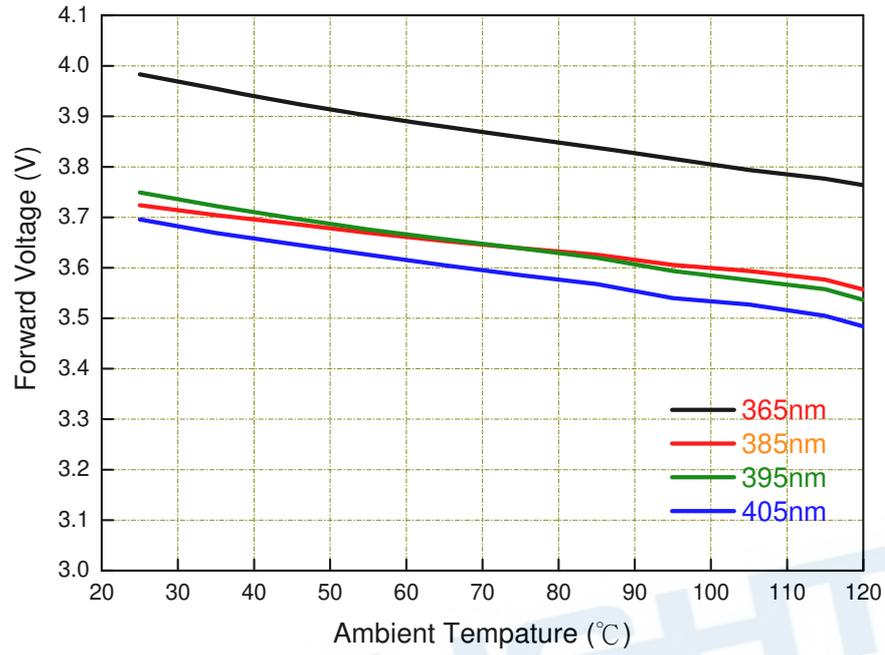
**Relative Radiant Flux vs. Ambient Temperature**  
**@ Forward Current = 1000mA (For 385nm · 395nm · 405nm)**  
**@ Forward Current = 700mA (For 365nm)**



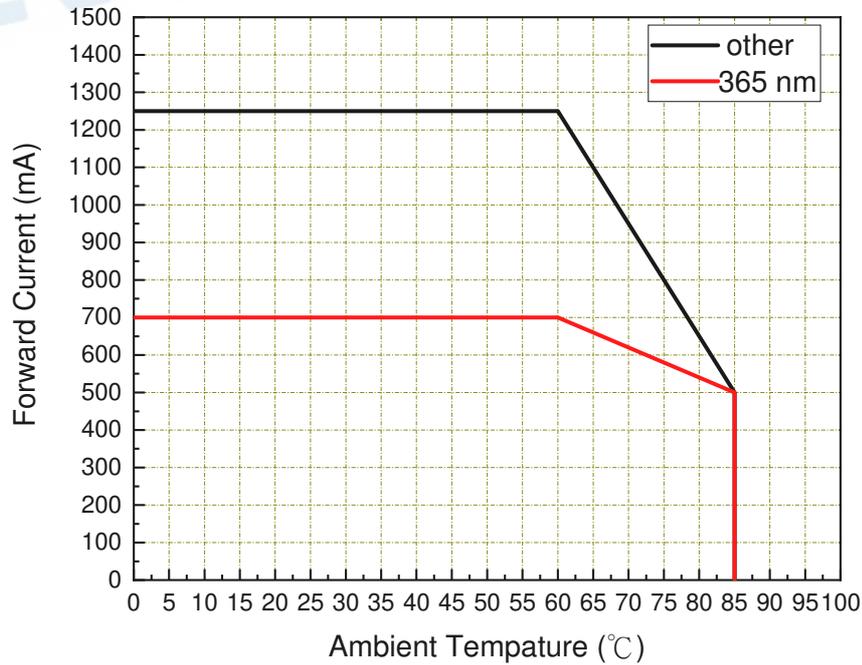
**Peak Wavelength vs. Ambient Temperature**  
**@ Forward Current = 1000mA (For 385nm · 395nm · 405nm)**  
**@ Forward Current = 700mA (For 365nm)**



**Forward Voltage vs. Ambient Temperature**  
**@ Forward Current = 1000mA (For 385nm · 395nm · 405nm)**  
**@ Forward Current = 700mA (For 365nm)**

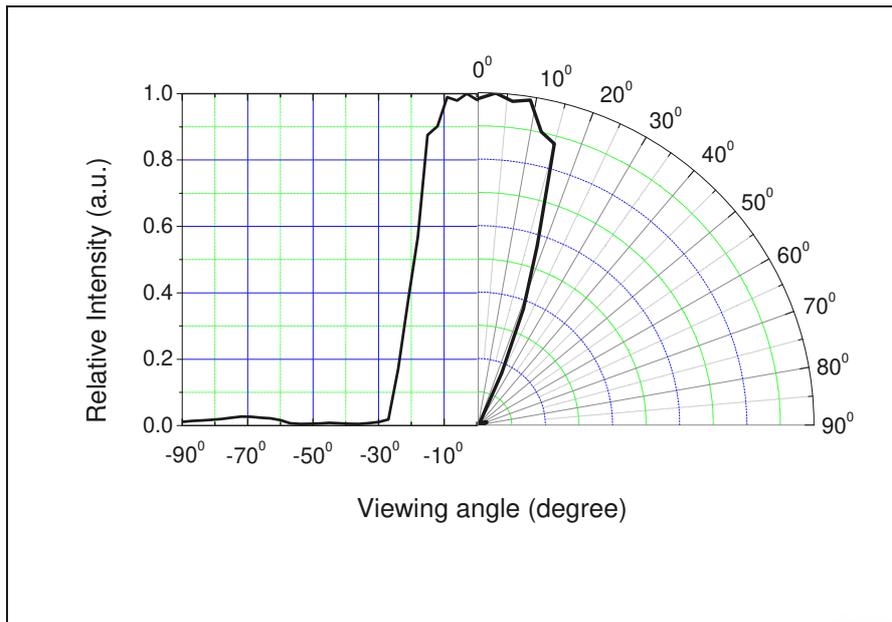


**Derating Curve**



## Typical Radiation Patterns

### Typical Diagram Characteristics of Radiation for ELUA3535NU3

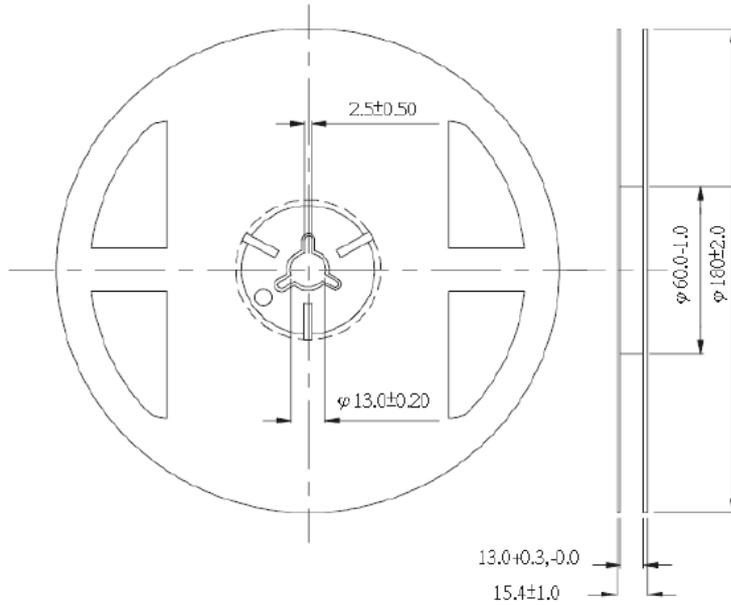
**Notes:**

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  $\pm 0.1$ 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		<b>EVERLIGHT</b>	<b>5</b>
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 XXXXXXXX			



## 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.**