

# ELUA3020LUB

## 0.08W Series



### Features

- Low power UVA LED
- Dimension 3.0mm\*2.0mm\*0.65mm
- ESD protection
- RoHS compliant
- Pb free
- EU REACH compliant
- Halogen Free compliant

### Description

The ELUA3020 product series is a ceramic based LED with high quality and reliability that suitable for UV application

### Applications

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

## Product Nomenclature

### ELUA3020LUB-PXXXXYY3040020-VA1D

EL = Everlight

UA = UVA

3020 = 3.0mm x 2.0mm Package

L = Package Material: LTCC

U = Coating: Au

B = Angle: 120°

P = Peak Wavelength

XXXX = Wavelength Range [1]

YY = Minimum Radiant Flux Spec [2]

3040 = Forward Voltage Spec: 3.0~4.0V

020 = Forward Current: 20mA

V = Chip Type: Vertical

A = Chip Size: 15mil

1 = Chip QTY: 1 chip

D = Process Type: Dispensing

#### Notes:

##### 1. Wavelength Range

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

##### 2. Minimum Radiant Flux Spec

Symbol	Description
Q4	20mW
Q5	25mW

## Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Max. DC Forward Current (mA)	$I_F$	30	mA
Max. ESD Resistance	$V_B$	8000	V
Max. Junction Temperature	$T_J$	95	°C
Operating Temperature	$T_{Opr}$	-40 ~ +85	°C
Storage Temperature	$T_{Stg}$	-40 ~ +85	°C

## PN of the ELUA3020LUB series: UVA LEDs

UV, ELUA3020LUB series LEDs at 20mA are listed below

Color	Order Code of ELUA3020LUB	Minimum Radiant Flux (mW)	Peak Wavelength (nm)	Forward Voltage (V)
Ultraviolet	ELUA3020LUB-P6070Q43040020-VA1D	20	360~370	3.0~4.0
	ELUA3020LUB-P8090Q53040020-VA1D	25	380~390	3.0~4.0
	ELUA3020LUB-P9000Q53040020-VA1D	25	390~400	3.0~4.0
	ELUA3020LUB-P0010Q53040020-VA1D	25	400~410	3.0~4.0

## Product Binning Radiant Flux Bins

Bin Code	Minimum Radiant Flux (mW)	Maximum Radiant Flux (mW)
Q4	20	25
Q5	25	30
Q6	30	35
Q7	35	40
Q8	40	45

**Notes:**

1. Radiant flux measurement tolerance:  $\pm 10\%$ .
2. Forward voltage bins are defined at  $I_F=20\text{mA}$  operation.

## Peak Wavelength Bins

Group	Bin	Minimum Peak Wavelength (nm)	Maximum Peak Wavelength (nm)
U	36	360	370
	38	380	390
	39	390	400
	40	400	410

**Notes:**

1. Peak Wavelength measurement tolerance:  $\pm 1\text{nm}$ .
2. Forward voltage bins are defined at  $I_F=20\text{mA}$  operation.

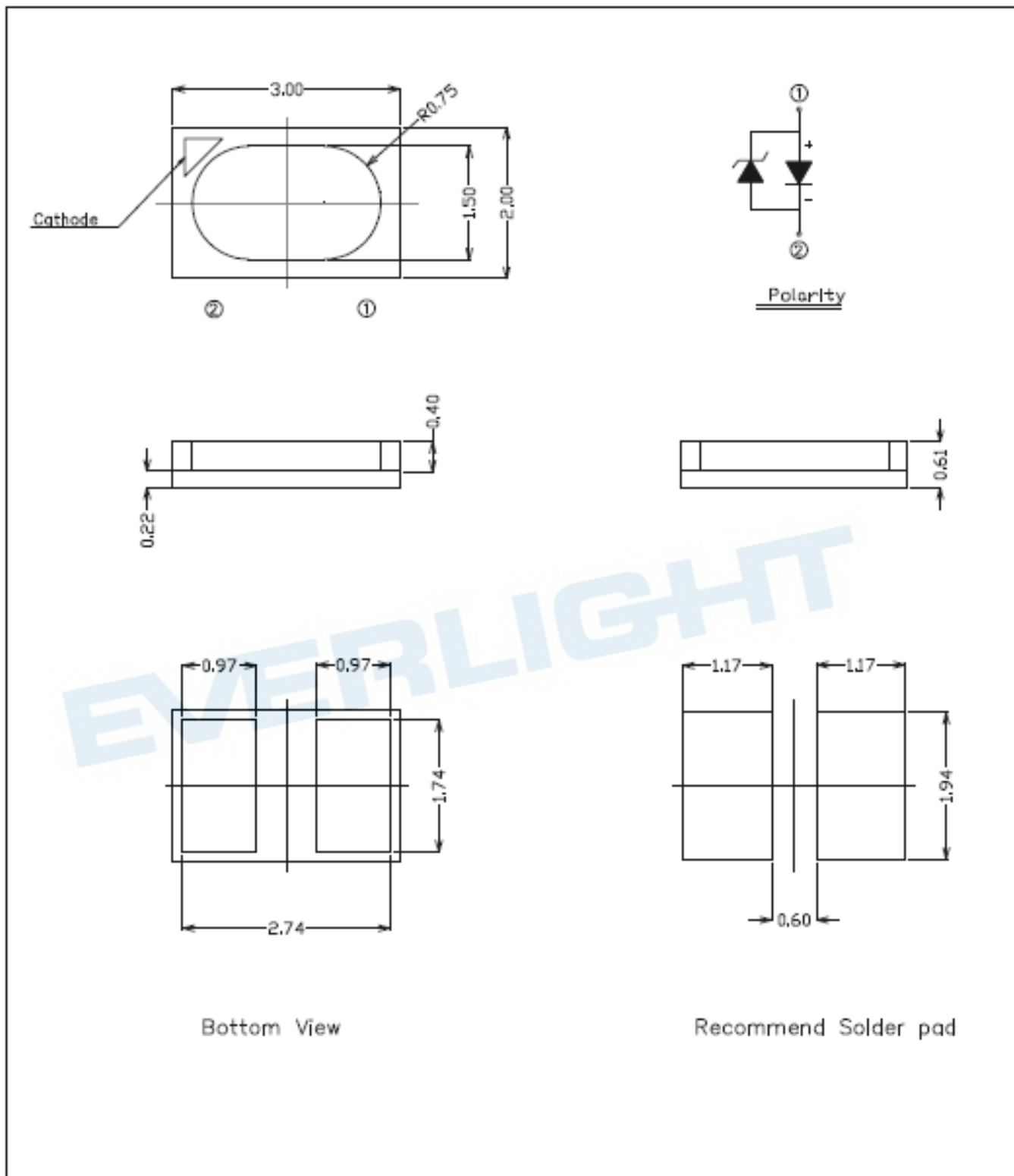
## Forward Voltage Bins

Bin	Minimum Forward Voltage (V)	Maximum Forward Voltage (V)
3032	3.0	3.2
3234	3.2	3.4
3436	3.4	3.6
3638	3.6	3.8
3840	3.8	4.0

**Notes:**

1. Forward voltage measurement tolerance:  $\pm 2\%$ .
2. Forward voltage bins are defined at  $I_F=20\text{mA}$  operation.

## Mechanical Dimension



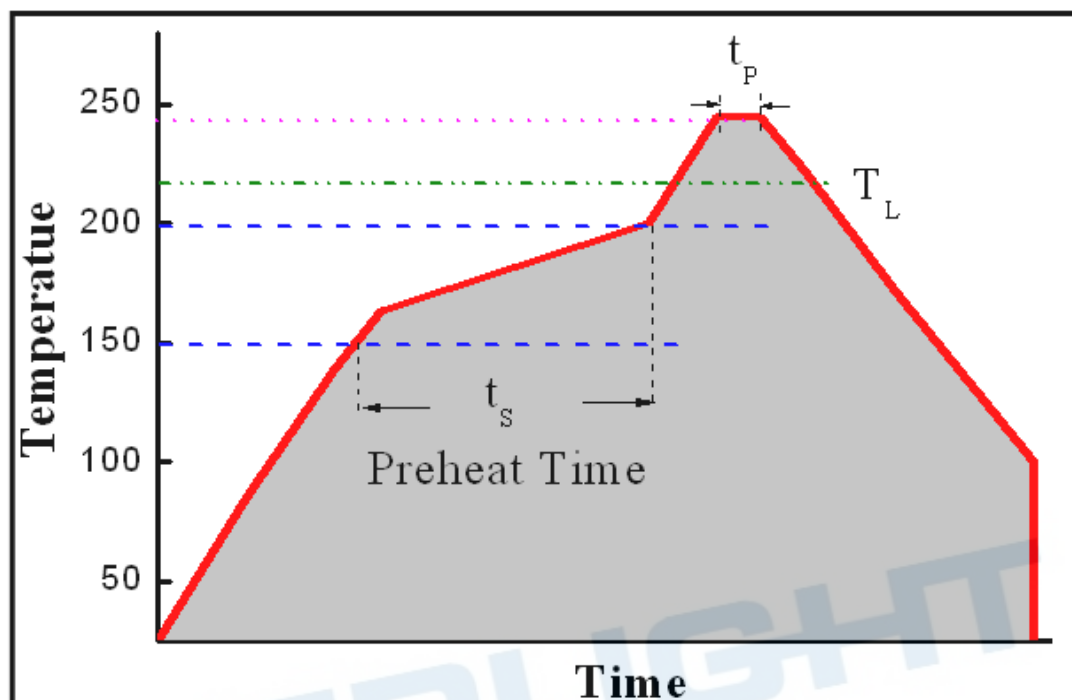
### Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are  $\pm 0.2$ mm.
3. The thermal pad is electrically unity from the Cathode and contact pads.
4. Do not handle the device by the lens. Incorrect force applied to the lens may lead to the failure of devices.

## Reflow Soldering Characteristics

### For Reflow Process

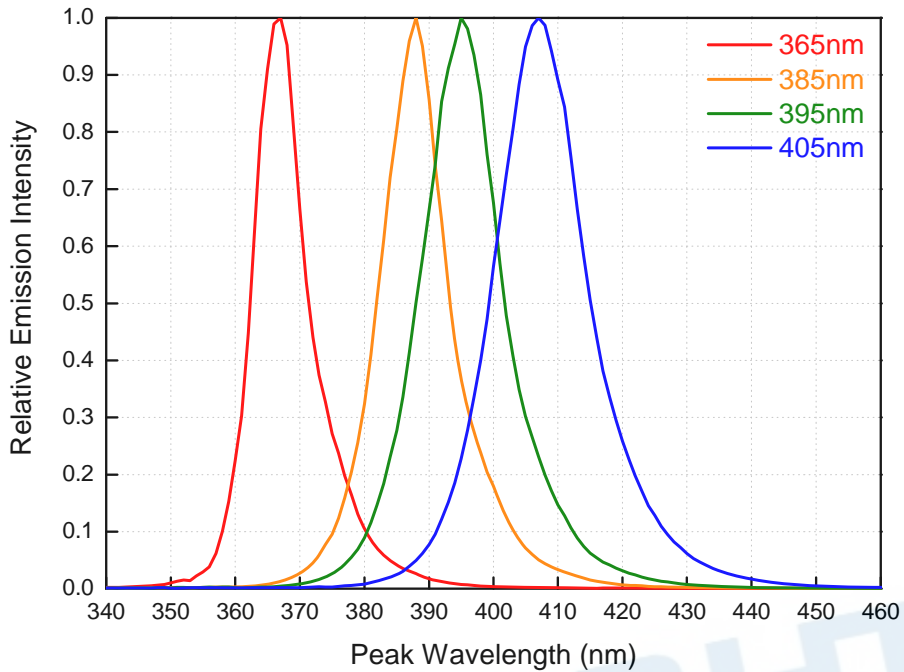
- ELUA series are suitable for SMT processes.
- Curing of glue in oven must be according to standard operation flow processes.



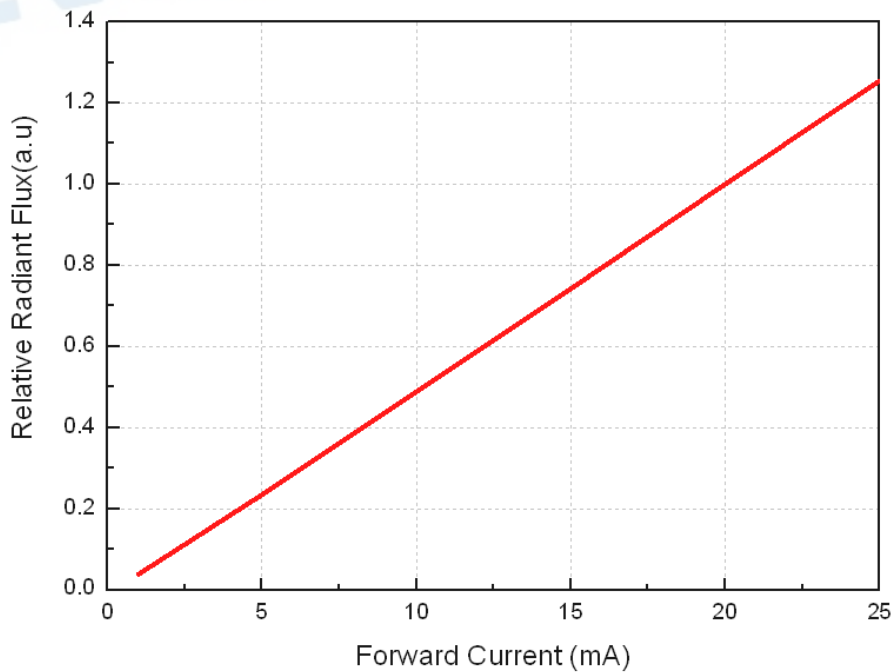
Profile Feature	Lead Free Assembly
Ramp-Up Rate	2-3 °C/S
Preheat Temperature	150-200 °C
Preheat Time ( $t_s$ )	60-120 S
Liquid Temperature ( $T_L$ )	217 °C
Time maintained above $T_L$	60-90 S
Peak Temperature ( $T_P$ )	240±5 °C
Peak Time ( $t_p$ )	Max 20 S
Ramp-Down Rate	3-5 °C/S

- 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

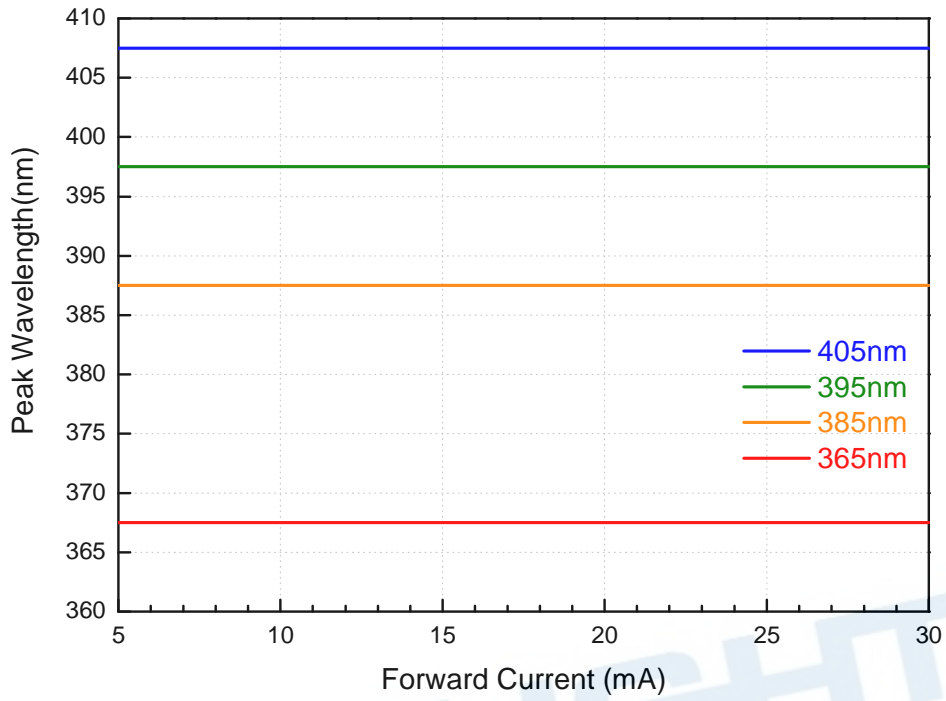


### Relative Radiant Flux vs. Forward Current @ Thermal Pad Temperature = 25°C



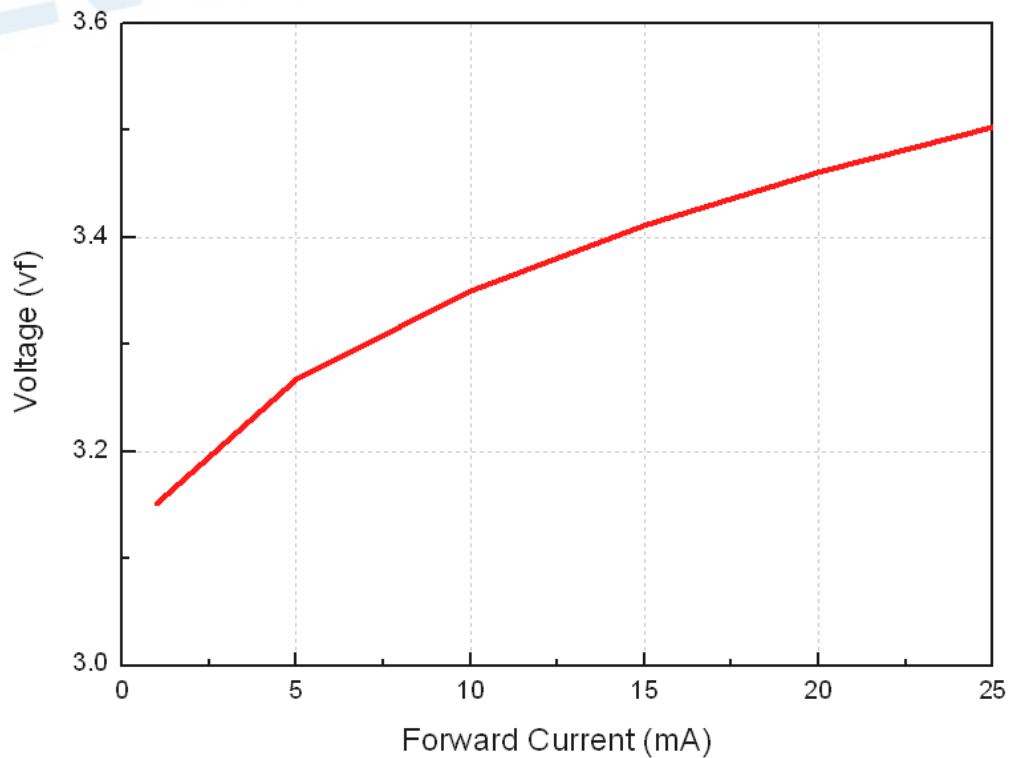
## Peak Wavelength vs. Forward Current

@ Thermal Pad Temperature = 25°C



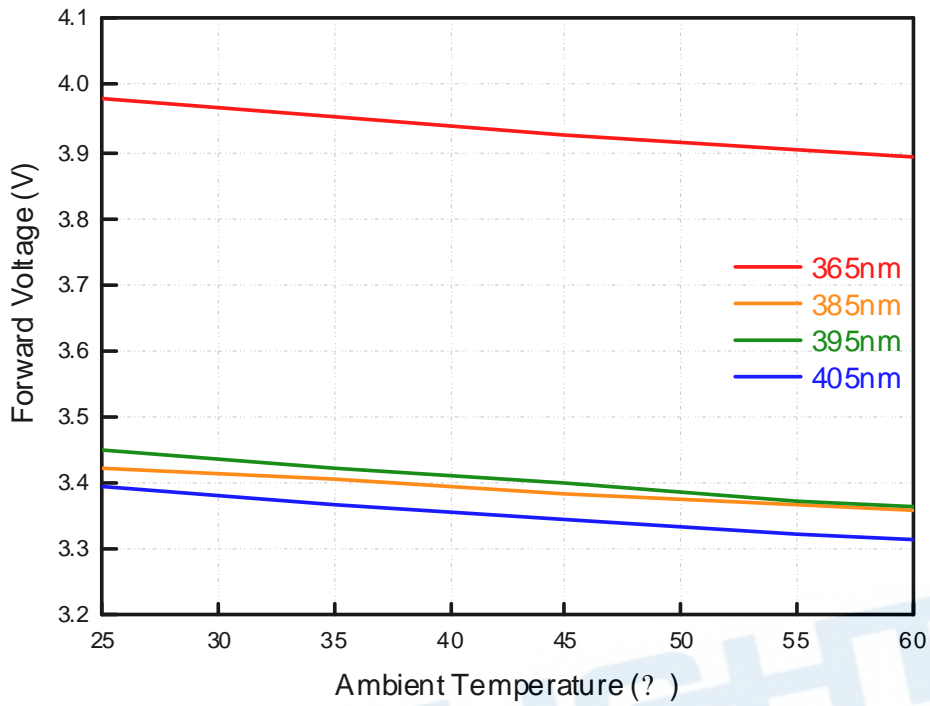
## Forward Voltage vs. Forward Current

@ Thermal Pad Temperature = 25°C

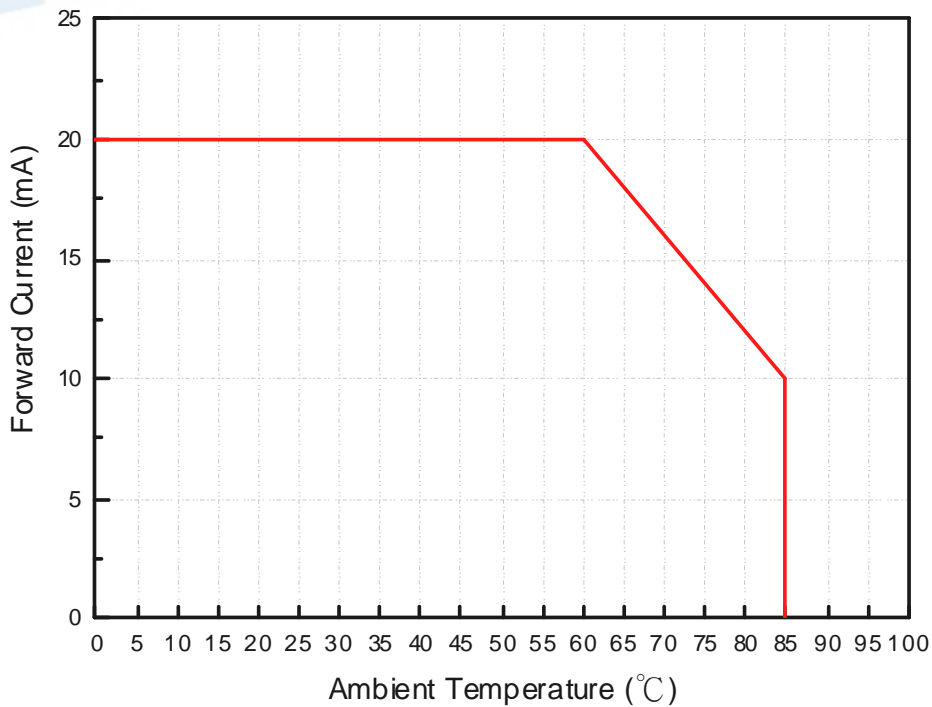




## Forward Voltage vs. Ambient Temperature @Forward Current = 20mA

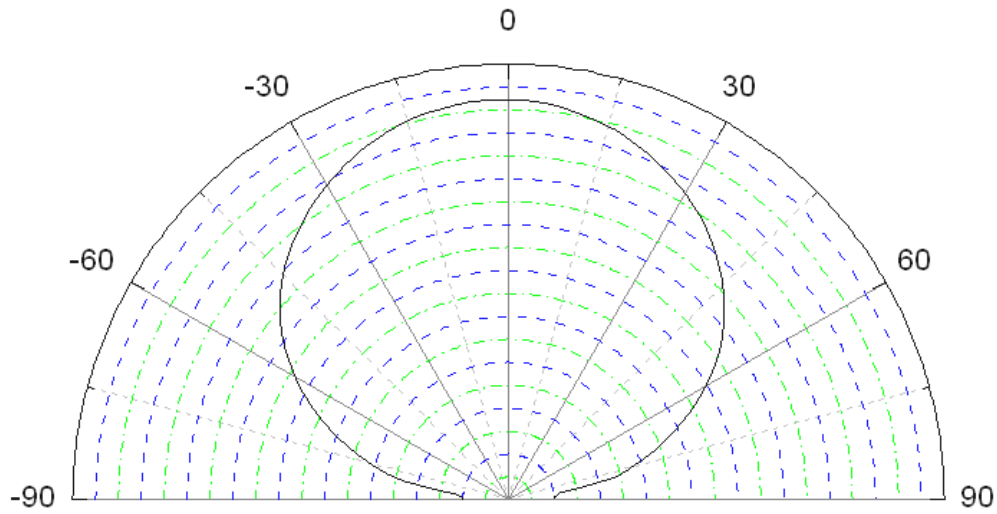


## Derating Curve



## Typical Radiation Patterns

### Typical Diagram Characteristics of Radiation for ELUA3020



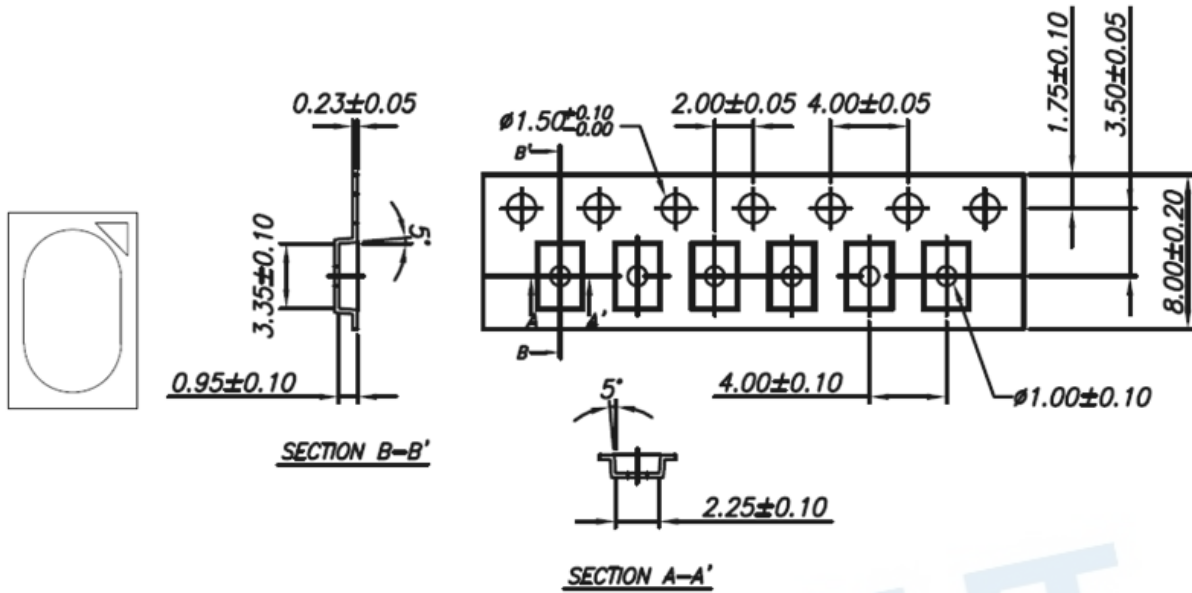
**Notes:**

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 Tape Packaging

Carrier Tape Dimensions as the following:

Reel: 2000pcs

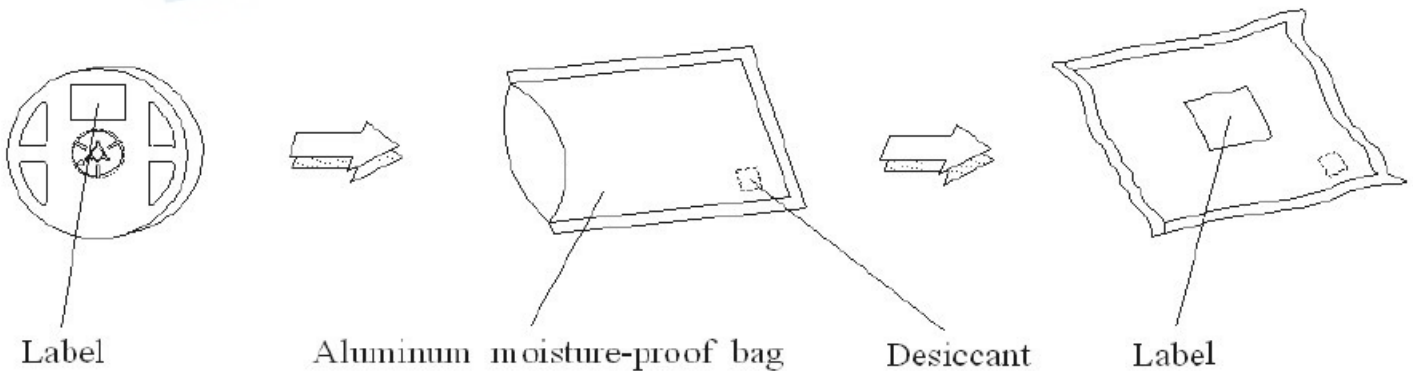


Unit = mm

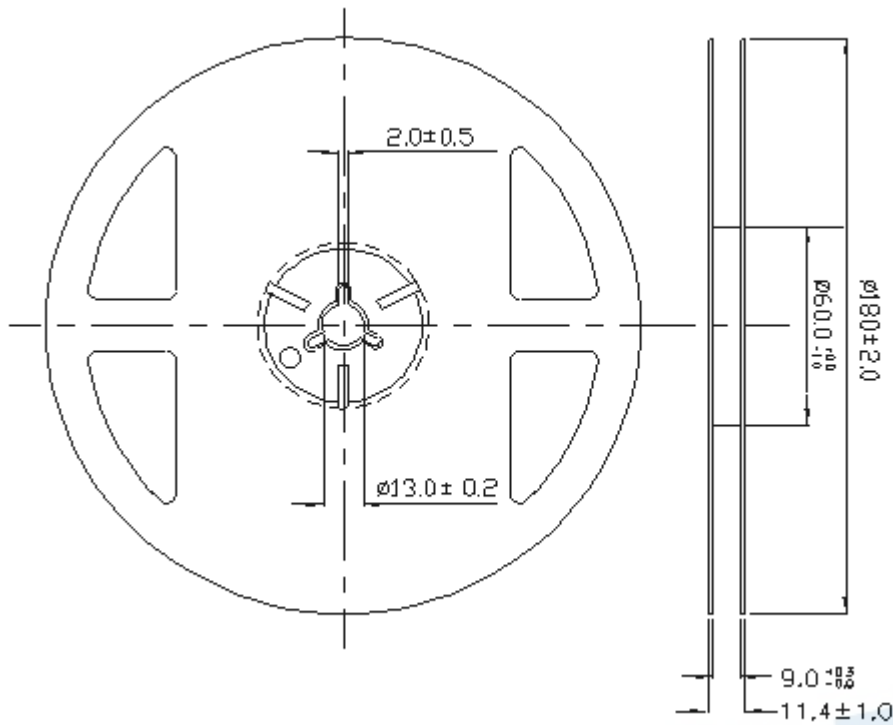
### Notes:

1. Tolerance unless mentioned is  $\pm 0.1$  mm;
2. Minimum packing amount is 1000 pcs per reel

## Moisture Resistant Packaging



## Emitter Reel Dimensions



### Notes:

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

## Product Labeling

### Label Explanation

CPN: Customer Specification (when required)

P/N : Everlight Production Number

QTY: Packing Quantity

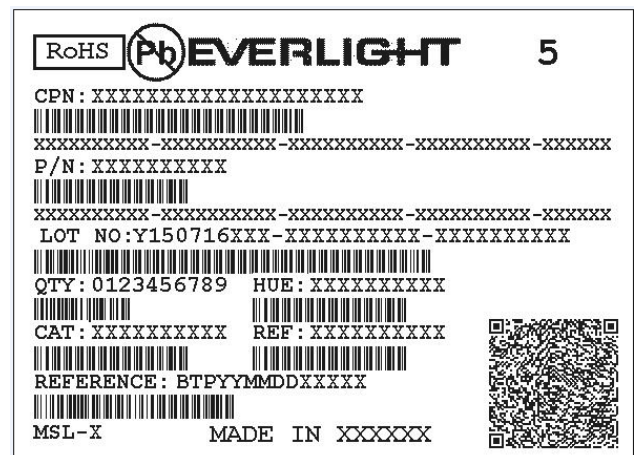
CAT: Luminous Flux (Brightness) Bin

HUE: Color Bin

REF: Forward Voltage Bin

LOT No: Lot Number

MADE IN TAIWAN: Production Place



## Storage Conditions

- Before the package is opened. The LEDs should be stored at 30°C or less and 90%RH or less after being shipped from EVERLIGHT and the storage life limits are 12 months.
- 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.
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