DATA SHEET

Revise History

Rev.	Descriptions	Date	Page
1.0	-	23-10-2009	-
2.0	Renew form	15-12-2015	-
2.1	Renew form	10-11-2018	-
2.2	Renew form	27-12-2021	-
2.3	Renew form	23-10-2023	-
2.4	Renew form	10-12-2024	-

Features

●Long operating life.
●Low Power Consumption.
●Low voltage DC operated.
●RoHS Compliant.

Application

●Status indicator.
●Industrial control panel.

Part Number	Dice Material	Emitted Color	Lens Color
IE-5UV4ST-15	InGaN	Purple	Water Clear

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity *1	IV	100	-	300	mcd	IF=20mA
Forward Voltage	VF	2.80	3.00	3.40	V	
Radiation Bandwidth	△λ	-	30	-	nm	
Color Rendering Index	Ra	-	-	-	-	
CIE Coordinates	x,y	-				
Peak Wavelength	λp	400	405	410	nm	
Dominant Wavelength	λd	-	-	-	nm	
Viewing Angle *2	2θ1/2	-	15	-	deg	
Reverse Current	IR	-	-	10	uA	VR=5V

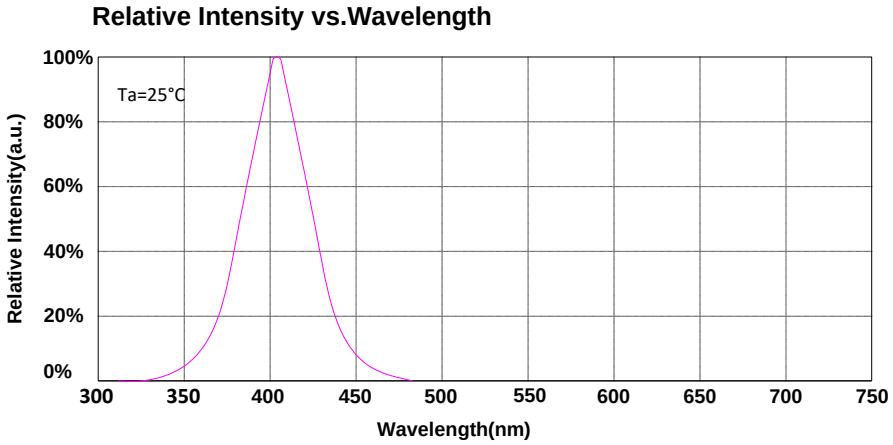
Notes :
1.A Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2.2θ1/2 is the o-axis angle where the luminous intensity is 1⁄2 the peak intensity.

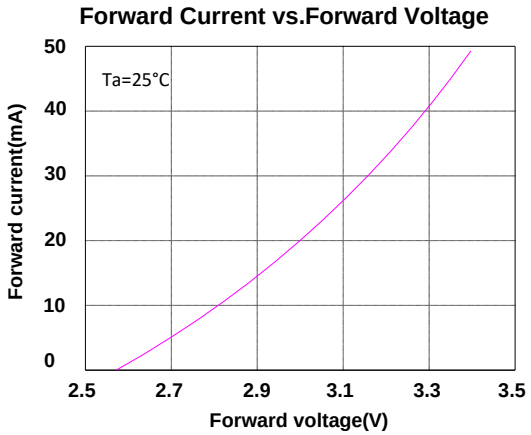
Absolute Maximum Ratings (Ta=25℃)

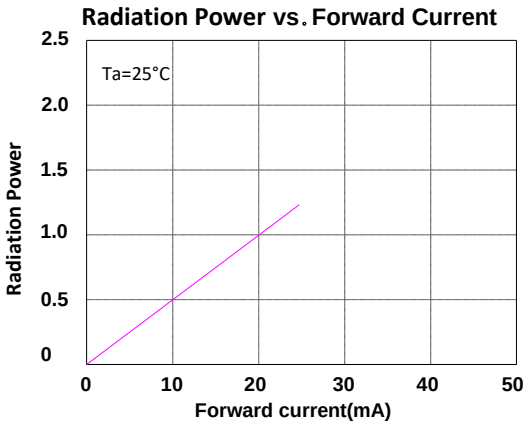
Parameter	Symbol	Max.	Unit
		Purple	
Power Dissipation	Pd	85	mW
Peak Forward Current*1	IFP	60	mA
Forward Current	IF	25	mA
Human Body Model	ESD	2000	V
Operating Temperature Range	Topr	-40to+85	°C
Storage Temperature Range	Tstg	-40to+90	°C
Wave Soldering	Tsld	260°C for 5 secs	

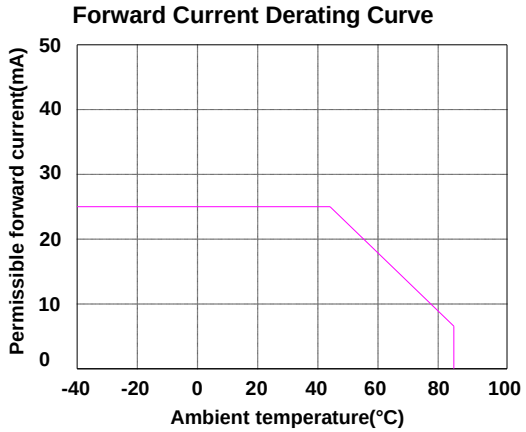
Notes : 1.Duty Factor=10%, Frequency=1kHz.

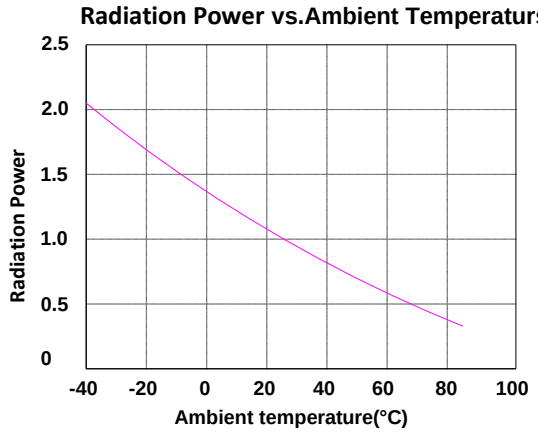
Optical & Electrical Characteristics Curves

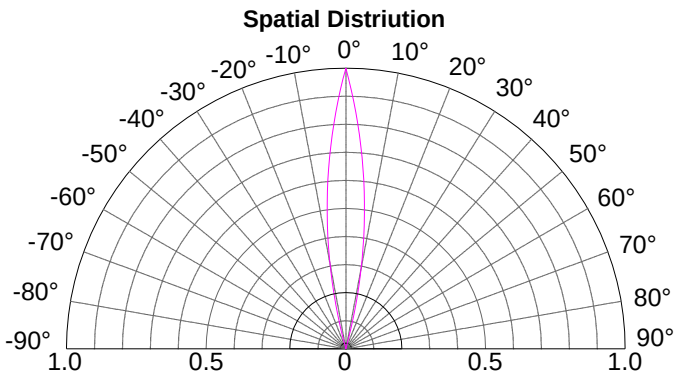












Electro-Optical Characteristics Bin Limits

Bin Range Of Wavelength

Bin Code	Min.	Max.	Condition
U1	400	405	IF=20mA
U2	405	410	
U3	-	-	
U4	-	-	
U5	-	-	
U6	-	-	

Bin Range Of Luminous Intensity

Bin Code	Min.	Max.	Condition
L1	100	200	IF=20mA
L2	200	300	
L3	-	-	

Bin Range Of Forward Voltage

Bin Code	Min.	Max.	Condition
V1	2.8	3.0	IF=20mA
V2	3.0	3.2	
V3	3.2	3.4	
V4	-	-	
V5	-	-	

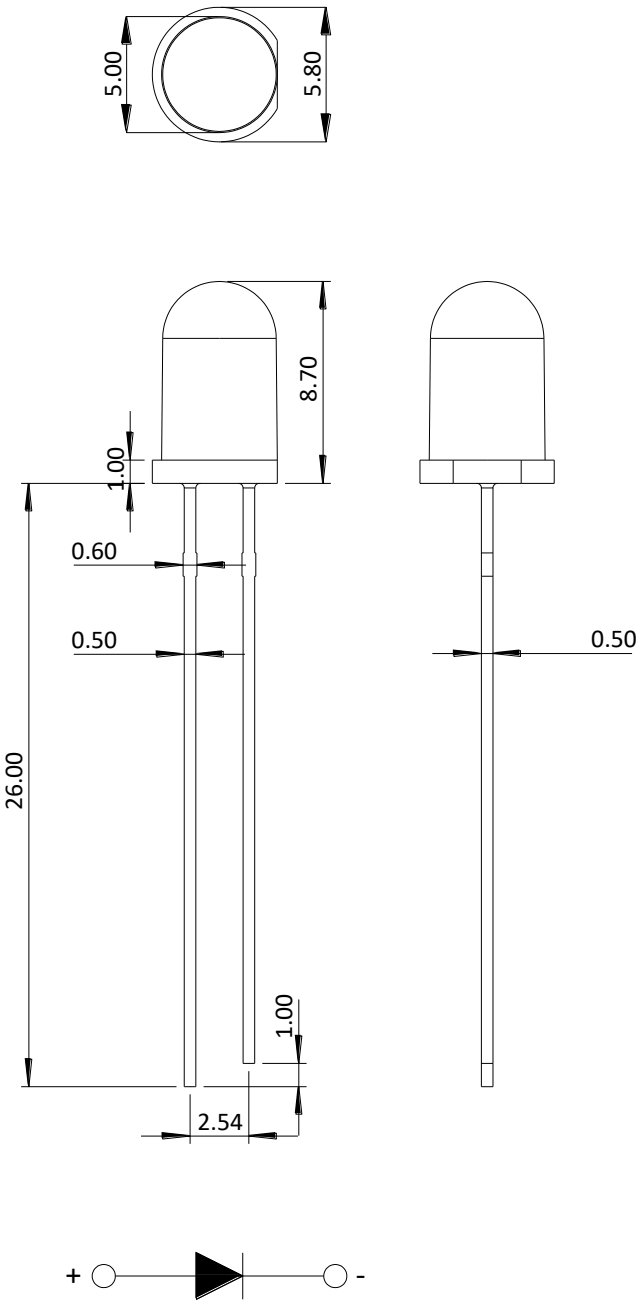
Notes

1.Luminous Intensity measurement tolerance: ±10%.

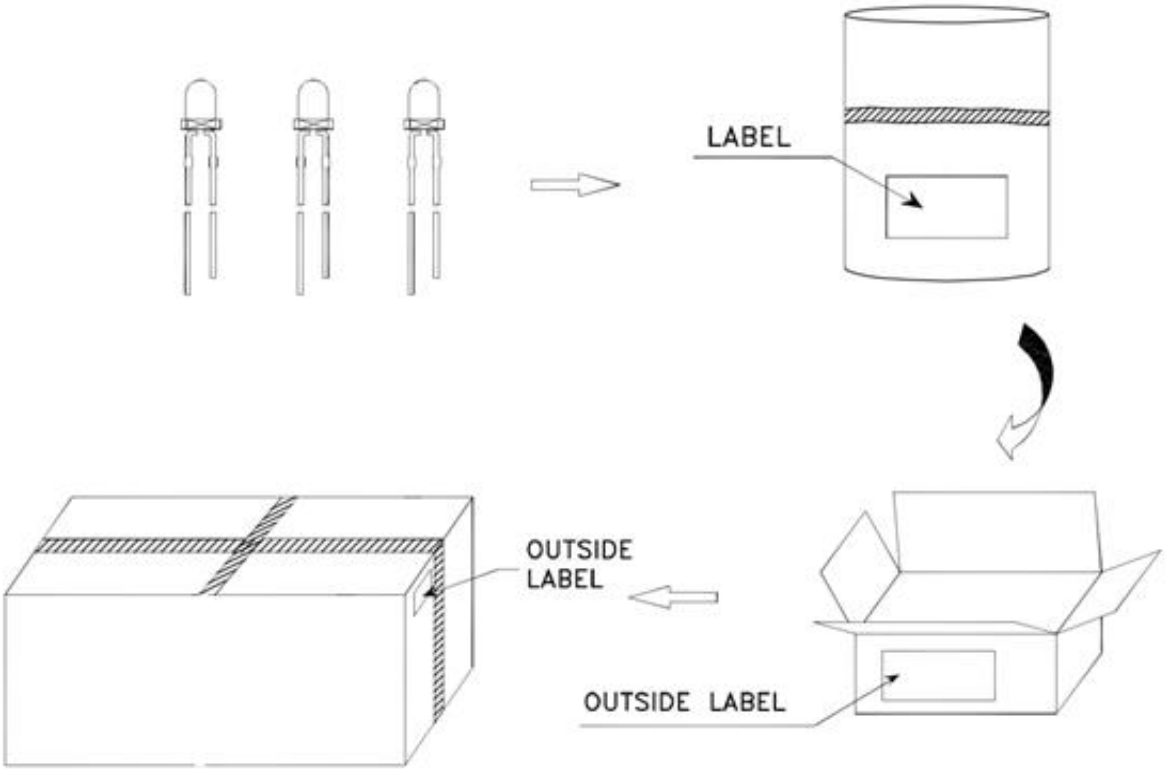
2.Wavelength measurement tolerance: ±1nm.

3.Forward voltage measurement tolerance: ±0.1V.

Package Dimension (Unit:mm,Tolerance:±0.20mm)



Packaging method



Packing Quantity: 1000 PCS/bag.

Precautions

1. Lead Forming

1.1 During lead formation, the leads should be bent at a point at least 3mm from the base of the epoxy bulb.

1.2 Lead forming should be done before soldering.

1.3 Avoid stressing the LED package during leads forming. The stress to the base may damage the LED's characteristics or it may break the LEDs.

1.4 Cut the LED lead frames at room temperature. Cutting the lead frames at high temperatures may cause failure of the LEDs.

1.5 When mounting the LEDs onto a PCB, the PCB holes must be aligned exactly with the lead position of the LED. If the LEDs are mounted with stress at the leads, it causes deterioration of the epoxy resin and this will degrade the LEDs.

2. Storage

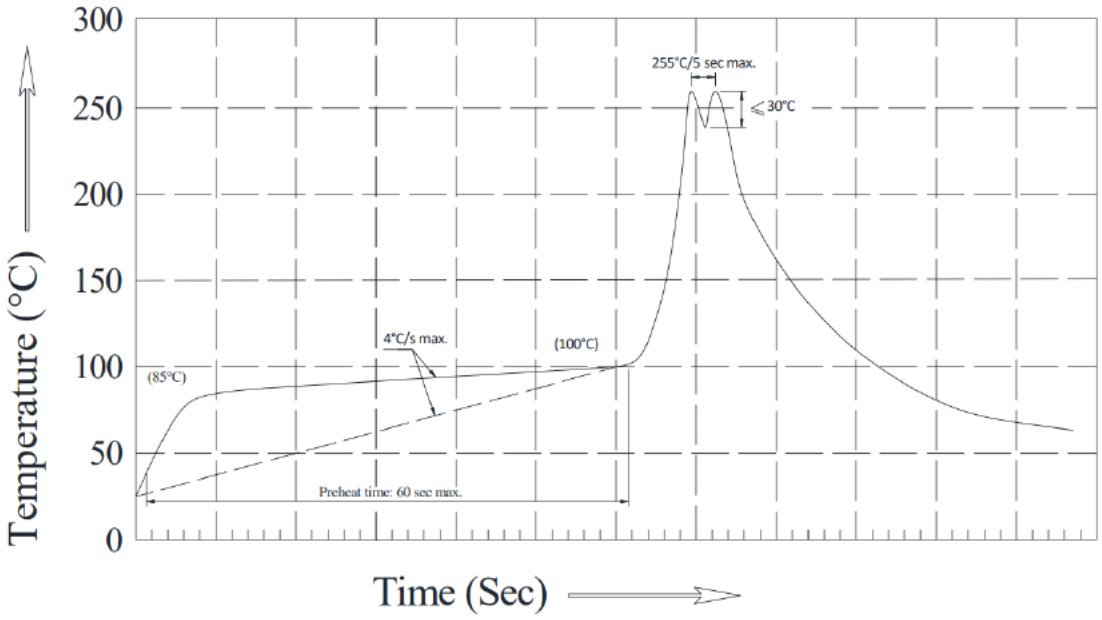
2.1 The LEDs should be stored at 30°C or less and 70%RH or less after being shipped from ekinglux and the storage life limits are 3 months. If the LEDs are stored for 3 months or more, they can be stored for a year in a sealed container with a nitrogen atmosphere and moisture absorbent material.

2.2 Please avoid rapid transitions in ambient temperature, especially, in high humidity environments where condensation can occur.

3. Soldering

3.1 Careful attention should be paid during soldering. When soldering, leave more then 3mm from solder joint to epoxy bulb, and soldering beyond the base of the tie bar is recommended.

3.2 Recommended Wave Soldering Profiles



Note:

1.Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C.

2.Peak wave soldering temperature between 245°C ~ 255°C for 3 sec (5 sec max).

3.Do not apply stress to the epoxy resin while the temperature is above 85°C.

4.Fixtures should not incur stress on the component when mounting and during soldering process.

5.SAC 305 solder alloy is recommended.

6.No more than one wave soldering pass.

3.3 Recommended soldering conditions

Soldering Iron		Wave Soldering	
Temperature Soldering Time	300℃ Max. 3 sec. Max. (one time only)	Pre-heat Pre-heat Time Solder Wave Soldering Time	100℃ Max. 60 sec. Max. 260℃ Max. 5 sec. Max.

Note
Excessive soldering temperature and / or time might result in deformation of the LED lens or catastrophic failure of the LED.

3.4 Avoiding applying any stress to the lead frame while the LEDs are at high temperature particularly when soldering.
3.5 Dip and hand soldering should not be done more than one time
3.6 After soldering the LEDs, the epoxy bulb should be protected from mechanical shock or vibration until the LEDs return to room temperature.
3.7 A rapid-rate process is not recommended for cooling the LEDs down from the peak temperature.
3.8 Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the LEDs.
3.9 Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

4. Cleaning

4.1 When necessary, cleaning should occur only with isopropyl alcohol at room temperature for a duration of no more than one minute. Dry at room temperature before use. 4.2 Do not clean the LEDs by the ultrasonic. When it is absolutely necessary, the influence of ultrasonic cleaning on the LEDs depends on factors such as ultrasonic power and the assembled condition. Ultrasonic cleaning shall be pre-qualified to ensure this will not cause damage to the LED.

5. Assembly method

The spacing between LED leadframe must match the spacing between mounting holes on the PCB when placing components. If LED leadframe need to be formed to ensure that the spacing between leadframe matches the spacing between PCB holes.