

Specification No.	
Date	

SPECIFICATIONS

MODEL : LEUV-C31A

ROITHNER LASERTECHNIK
VIENNA AUSTRIA
www.roithner-laser.com
office@roithner-laser.com
Tel.: +43 1 586 52 43-0
Fax: +43 1 586 52 43 44

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**Optical Device Business Operation
Components Division**

UV-LED CHIP

MODEL : LEUV-C31A

APPLICANT		
Traced by	Checked by	Approved by
K.Song	B.H. Park	J.J. Jung

**Optical Device Business Operation
Components Division**

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- Be careful never to exceed , even momentarily, the absolute maximum ratings specified in the data sheet.
- It will not be held responsible for any damage to the user that may result from accidents or any other reasons during operation of the user's unit if use to exceed the absolute maximum ratings, or not keep the matters that demand special attention.

Precautions for use

- ① Be sure to ground the worker's body and equipment when he or she handles the device.
- ② Do not drop the device or give any other mechanical shock.
- ③ Set the electric potential of the work bench to the same as that of the power supply ground line.
- ④ Store diodes in relative humidity of bellow 70%, and assure that the storage atmosphere is avoid of dust and gases harmful to diodes.
- ⑤ Use a storage case which can not be easily charged with static electricity.
- ⑥ This device is designed for general electric equipment.
 - * Computer
 - * OA equipment
 - * AV equipment
 - * Measuring instrument
 - * Home appliances
 - * Telecommunication equipment(Terminal) etc.

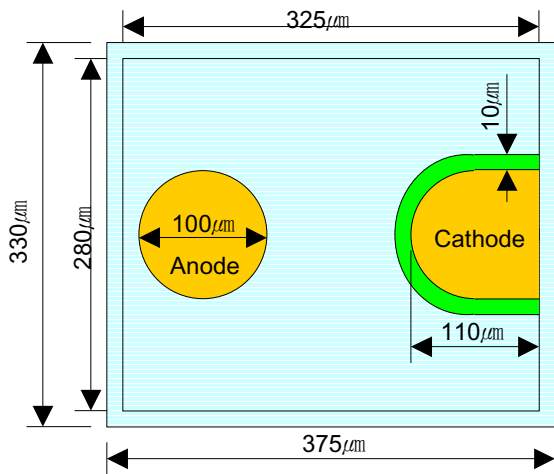
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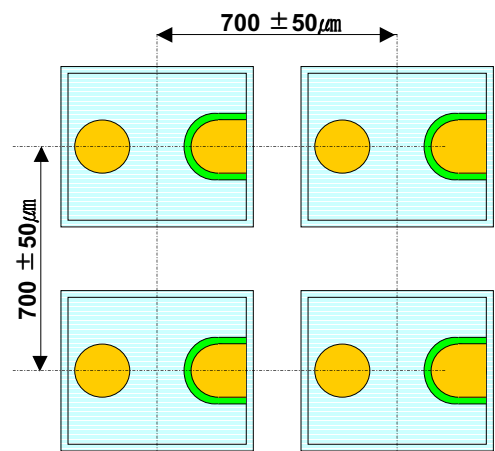
1. Features :

- High luminous intensity ; long operation life
- Low current application ; low power consumption
- Indoor / Outdoor applications
- 100% Probing test
- Excellent uniformity on wavelength and intensity

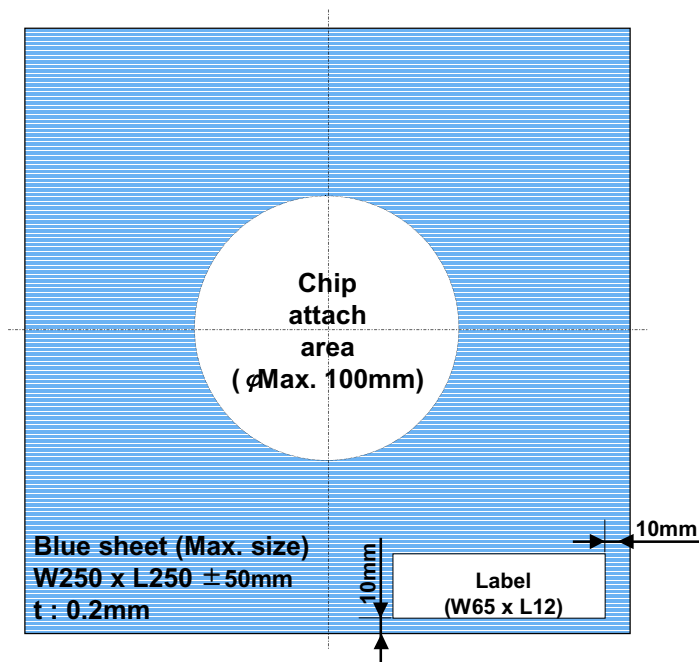
2. Outline Dimensions : (Unit:mm)



Chip Pattern



Chip's Pitch Shape



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3. Chip's Physical Structure :

Chip Characteristics	Substrate	Sapphire
	Chip size	0.375 x 0.330 ±0.03mm
	Thickness	80 ± 20 μ m
	Orientation	(0001) ±0.5 °c- plane

4. Absolute Maximum Rating

Parameter	Symbol	Condition	Unit
Forward Current	If	30	mA
Pulse Forward Current ¹⁾	Ifp	100	mA
Reverse Voltage	Vr	5	V
Power Dissipation	Pd	120	mW
Operating Temperature	Topr	- 30 ~ +80	°C
Storage Temperature	Tstg	- 40 ~ +100	°C

1) Pulse Width<10msec, Duty<1/10

5. Electro-Optical Characteristics :

(Ta=25°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit	
Forward Voltage	Vf	If = 20mA			4.0	V	
Reverse current	Ir	Vr = 5.0 V			10	μ A	
Dominant Wavelength	Wp	If = 20mA	390		405	nm	
Luminous Intensity ⁽¹⁾	Iv	If = 20mA	2.0				
				A			mW

(1) Luminous Intensity is measured by equipment on bare chip. However, the electrical and optical characteristics on lamps made from our chips is not guaranteed.

6. Reliability (Aging Test)

6-1 The reliability criteria of LED chip

Operating condition	Room Temp., If=20mA, 48Hr
Judgement of failure	Vf < Initial values lop x 1.2
	Ir < Initial values lop x 1.2
	Iv < Initial values lop x 1.2

Ass'y Type : TO-18 Header, Without resin coating

6-2 Appearance check

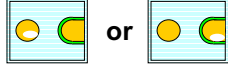









We do appearance check for all chips, and we do not supply chips which will be out of specification according to inspection.

6.2.1 Check method : by 2 x 10 or 2 x 20 microscope.

6.2.2 Sampling size : 5chips/sheet.

6.2.3 Check items : appearance check of top side.

6.2.4 Standard : FQC inspection specification.

Description (Top side view)	Figure
Electrode damaged area $\leq 1/10$ original electrode area.	 or 
Particle, dust, remnant area can not be larger than 1/20 emitting area.	
Chip crack damage, underlying damage area must be $\leq 25\mu\text{m}$ diameter.	
p, n-electrode surface fineness must be uniform.	
Defect shape around the electrode width must be ≤ 1 mil.	 or 
Contamination in chip can not be larger than 1/10 chip emitting area	
Bottom slip cutting can not be more than 1/10 original bottom area.	 (side view)
Inclination of chip angle $\leq \pm 30^\circ$ Chip fall down $\leq 2ea / \text{sheet}$	
Keep protection paper absolutely clean. Protection paper can not be damaged or scratched.	

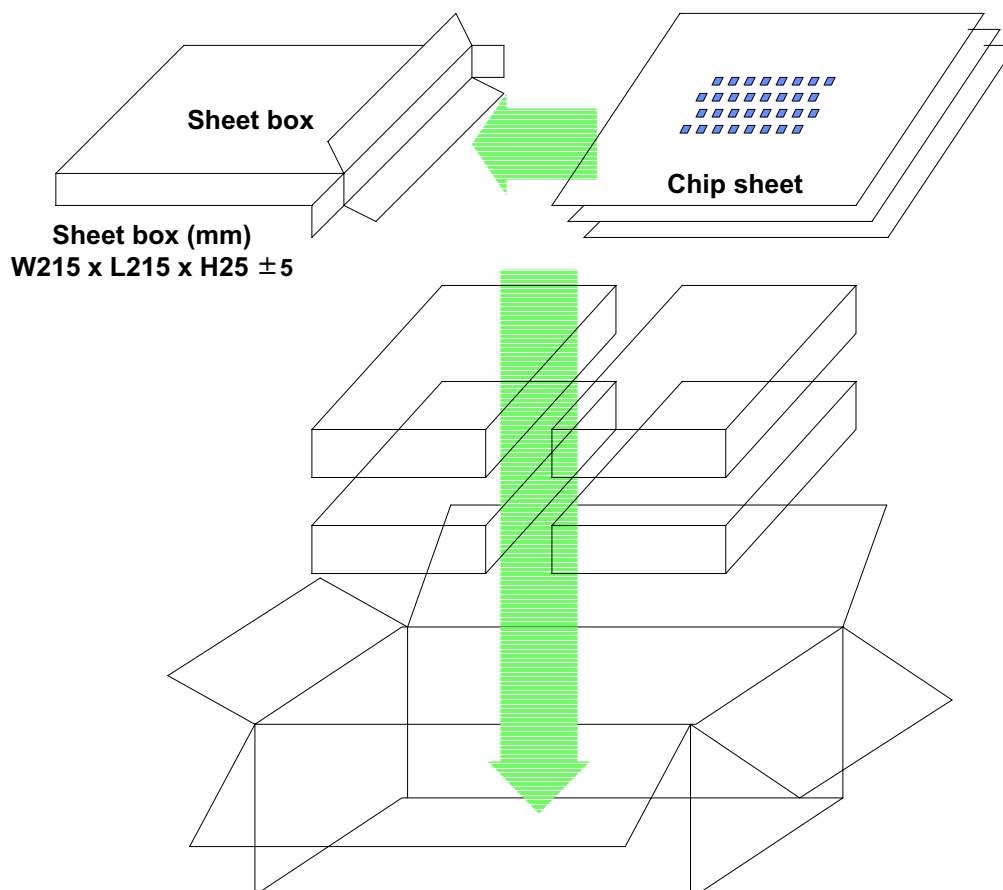
7. Packaging

The chips are packed in paper (5mm thick) boxes after packaging in anti-electrostatic polyethylene bag. According to the total delivery amount, cardboard and air vinyl boxes will be used to protect the wafers from mechanical shocks during transportation.

Please refer to bellow figure. The label on the minimum packing unit bag shows ; model number, lot number and quantity with data.

The boxes are not resistant and they must be keep away from water, moisture and dust.

If a box shows noticeable damage upon arrival at the user's warehouse, it is recommended to make a notice within two weeks after arrival of the products.



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8. Lot Number

The first six digits number shows lot number.

The lot number is composed of the following character :

Example : △ ▽ ★ ☆ ◆ ◆ ◎ ○

△ ▽ : Kind of device (BL for Blue LED, HR for Hyper RED)

★ : Year (M for 2000, M1 for 2001)

☆ ◆ : Month (Ja for Jan., Se for Sep., Oc for Oct., No for Nov.)

◆ ◎ ○ : Product Number

9. Others

We cannot take any responsibility for any trouble that are caused by using the chips at conditions exceeding our specifications

These chips are designed and manufactured for standard applications such as electric home appliances, communication equipment, office equipment, electronic equipment and so on. It is recommended to consult us in advance if user's application requires any particular quality or reliability which concerns human life. Examples would be medical equipment, aerospace applications, traffic signals, safety system equipment and so on.