



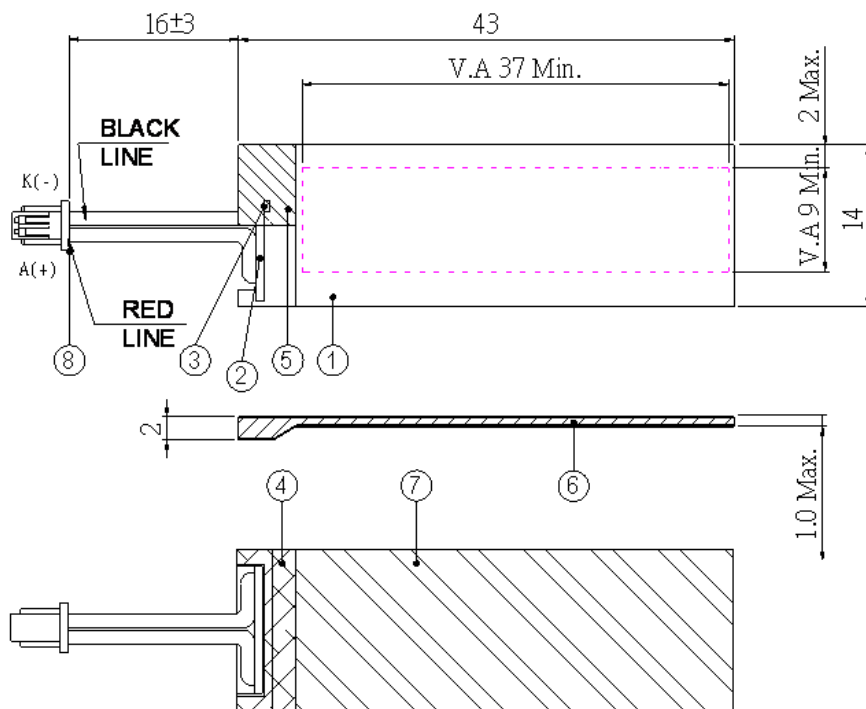
American Opto Plus LED

BL-BL4314R

43 x 14 mm Red LED Backlight

- ❖ RoHs Compliant
- ❖ Low Power Consumption
- ❖ Easy mounting on P.C board or socket

Package Dimensions:



No.	Parts Name	Q'ty	Material
1	Light Guide	1	PC (Transparent)
2	PCB	1	FR-4
3	LED	1	Red color
4	Reflective Sheet	1	PET
5	Cover Tape	1	PET
6	Cover Tape	1	PET
7	Double Side Adhesive Tape	1	
8	Connector	1	30AWG

Note: 1. All dimensions are in millimeter tolerance is $\pm 0.2\text{mm}$ unless otherwise noted

Part Number	Emitted Color	
BL-BL4314R	Red	



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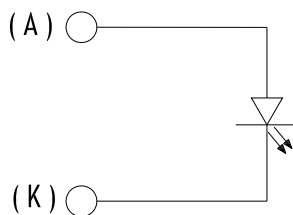
Electrical / Optical Characteristics: (Ta = 25°C)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Average Luminous Intensity	Iv	80	-	-	cd/m ²	IF = 20mA ※2
Peak Emission Wavelength	λ_p	-	630	-	nm	IF = 20mA ※2
Forward Voltage	VF	-	2.0	2.3	V	IF = 20mA ※1
Reverse Current	IR	-	-	0.1	mA	VR = 5V
Luminous Tolerance	Iv -m	70	-	-	%	Min/Max*100%

Absolute Maximum Rating: (Ta = 25°C)

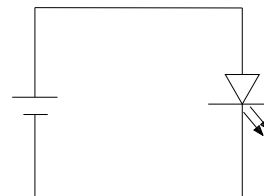
Parameter	Symbol	Specification	Units
Power Dissipation	Pad	46	mW
Continuous Forward Current	IAF	20	mA
Reverse Voltage	VR	5	V
Operation Temperature Range	TOPR	-20°C to +70°C	
Storage Temperature Range	TSTG	-30°C to +80°C	

※1 . Internal Circuit Diagram



A= ANODE
K=CATHODE

※2 . Testing Circuit





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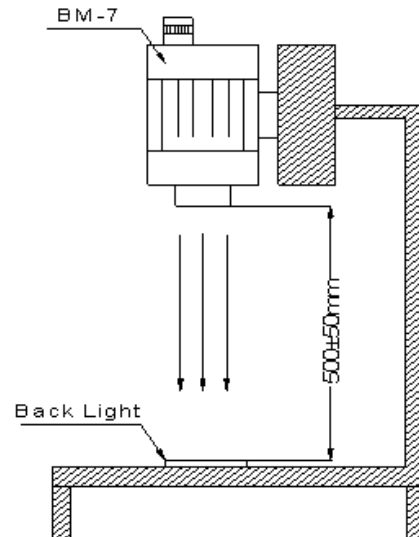
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5. Measuring Condition And Method For Optical Characteristics

5.1 Measuring Method

Measuring Point:

The brightness measuring device shall be located at a distance of $500 \pm 50 \text{ mm}$ from the radiation surface of Back Light with perpendicular direction and the measurement is to be carried out under the visual angle of brightness measuring device is set as 1.0°

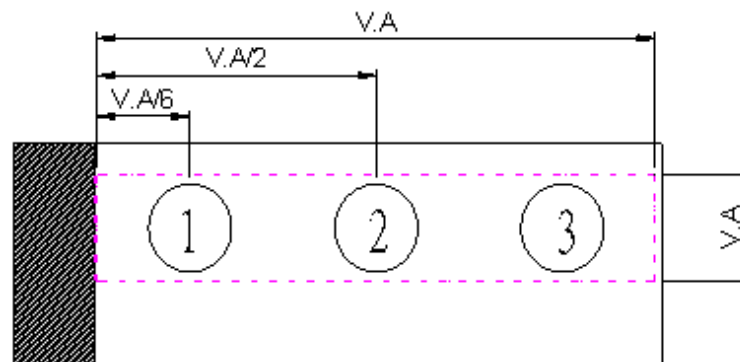


5.2 Measurement of Luminance [Measuring Apparatus : BM-7]

This luminous intensity is the average of 3 detected points.

The standard aperture is set at $\psi 7.7$.

Luminous Tolerance: The ratio of the maximum luminance ($B_{\max}$) and the minimum luminance ($B_{\min}$) bases on 3 detected points.





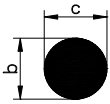
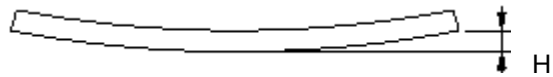
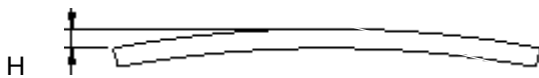
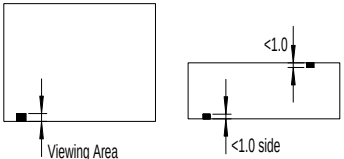
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6. Defective Appearance

No.	Item			Specification	Acceptive Quantity	Remarks
1	Foreign material		line type	length<1.0mm	Accept	
				1.0<length≤1.5mm width≤0.05mm	1Accept 2 Reject	
				1.5<length	Reject	
			round type	diameter≤0.1mm	Accept	
				0.1mm<diameter≤0.15mm	1Accept 2 Reject	
				diameter<0.15mm	Reject	
2	Holes			diameter≤0.15mm	1Accept 2 Reject	raw material injection spot is not specified
				depth≤0.1mm		
3	Black and white spot (diameter= (a+b)/2)			diameter<0.1mm	Accept	
				0.1<diameter<0.2mm	1Accept 2 Reject	
				0.2mm<diameter	Reject	
	Bending	50mm<L≤100mm		H<0.3mm	Accept	all bending exclude thinckness of housing
		refer to the drawing	upper bending			
			downward bending			
4	Cracking				1Accept 2 Reject	
5	Contamination			Cosmetic	Reject	



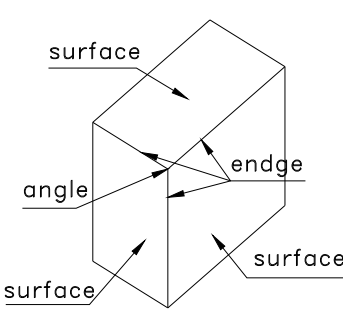
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7. Reliability Test

Item	Content	Test condition	Test Time /Cycles	Failure Judgment Criterion (unit: pcs)
Operation Life Test	1. High temperature test(Connect)	Tstg=+80°C	240hrs	1.Luminance $\Delta\% \leq 20\%$ 2.VF $\Delta\% \leq 5\%$ 3.Chromaticity coordinales ≤ 0.015 4.Cosmetic: defective
	2.Low temperature test(Disconnect)	Tstg=-30°C	240hrs	
	3.High temperature storage test(Disconnect)	Tstg=+80°C	240hrs	
	4.Low temperature storage test(Connect)	Tstg=-40°C	240hrs	
	5.High temperature and Humidity test(Connect)	Tstg=60°C&RH=90%	240hrs	
	6.Thermal shock test(Disconnect)	Temperature:(-30°C/30min~+80°C/min)	100cycles	
	7.Operation Life Test(Follow drive current)	25°C±5°C	1000hrs	
Drop Test	1.Unit weight and drop height benchmark: 0~9kg H=760mm 9.1~22.0kg H=610mm 22.1~45.5kg H=530mm	 1.0s (seven direction: adjacent three sides, three edges and one corner)		1.After test: Cosmetic and mechanical failure judgment criterion: a. Foreign material, scratch, position shift, components drop, roughness, crease B. Light on or light off defective(wrink, uneven color or partial light) C. Mechanical or physical breakage
Vibration Test		Vibration scope:1.5mm Frequency:50Hz	adjacent three sides each per 15min	Cosmetic: breakage and drop Electrical: dead light, wink



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9. Storage Precautions:

If storage term beyond three months, storage temperature must under 30°C and humidity must under 60%.

10. Electro-Static Discharge Control:

Since the product is sensitive to electro-static, when handling it, you must be careful, especially when operation voltage exceed rating voltage, it will make the product damage

- A. Make certain that you are grounded when handling, eg. wear ESD ring, fingertip, clothes and shoes etc.
- B. All production equipments and instruments must be grounded and apply ion fan if necessary
- C. Take measures to avoid ESD in the whole process of assembling