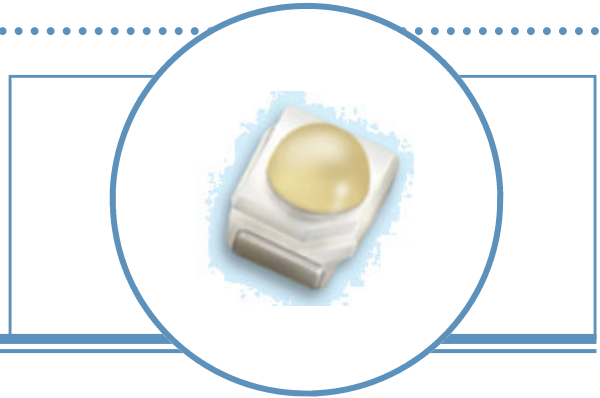


# Amber PLCC4 Surface Mount LED with Domed Lens

## OVSAABLCR8

- High intensity with low power consumption
- White PLCC4 package with clear domed lens
- Wide viewing angle
- Packaged in 8 mm tape on 7" diameter reel
- Compatible with automatic placement equipment
- Compatible with infrared and vapor phase reflow solder process
- Amber (591 nm)

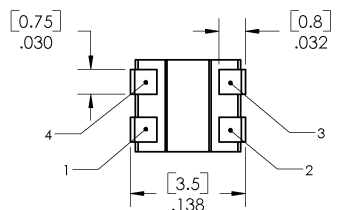
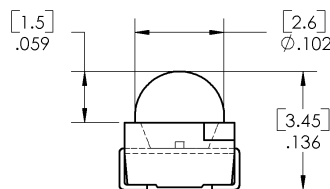
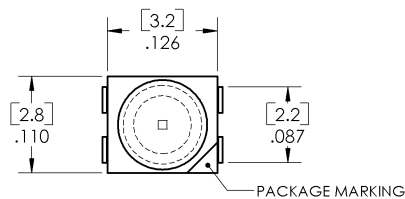


The **OVSAABLCR8** is designed for wide angle, uniform light output. Its internal reflector and colorless clear lens optimize luminous intensity and make it ideal for backlighting applications and for coupling with light guides.

### Applications

- Traffic lights
- Signal and symbol luminaire
- Mono-color indicators
- Backlighting (LCD, switches, displays, illuminated advertising)
- Interior automotive lighting (instrumentation clusters)
- Safety marker lights (steps, exit ways)

Part Number	Material	Emitted Color	Intensity Typ. mcd	Lens Color
OVSAABLCR8	AlInGaP	Amber	1800	Water Clear



1, 2, 3 CATHODE 4 ANODE  
DIMENSIONS ARE IN: [MILLIMETERS]  
INCHES



**DO NOT LOOK DIRECTLY AT LED WITH UNSHIELDED EYES OR DAMAGE TO RETINA MAY OCCUR.**

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

## Absolute Maximum Ratings

Storage Temperature Range	T <sub>STG</sub>	-40 ~ +100 °C
Operating Temperature Range	T <sub>OPR</sub>	-40 ~ +100 °C
Reverse Voltage	V <sub>R</sub>	5 V
Continuous Forward Current	I <sub>F</sub>	70 mA
Peak Forward Current (10% Duty Cycle, PW ≤ 100 μsec)	I <sub>FP</sub>	200 mA
Power Dissipation	P <sub>D</sub>	225 mW
Junction Temperature	T <sub>J</sub>	110 °C
Junction/Ambient <sup>1</sup>	R <sub>THJA</sub>	300 °C
Junction/Solder Point	R <sub>THJS</sub>	150 °C
Soldering Temperature <sup>2</sup>		260 °C

Note:

1. R<sub>TH</sub> test condition: mounted on PCB FR4 (pad size ≥ 16mm<sup>2</sup>)
2. Solder time less than 5 seconds at temperature extreme.

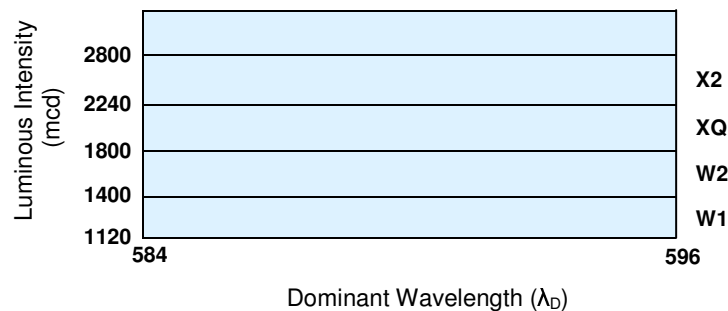
## Electrical Characteristics

T<sub>A</sub> = 25° C unless otherwise noted

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
I <sub>V</sub>	Luminous Intensity	1120	1800	----	mcd	I <sub>F</sub> = 50 mA
V <sub>F</sub>	Forward Voltage	----	2.6	3.2	V	I <sub>F</sub> = 50 mA
I <sub>R</sub>	Reverse Current	----	----	10	μA	V <sub>R</sub> = 5 V
λ <sub>D</sub>	Dominant Wavelength	----	591	----	nm	I <sub>F</sub> = 50 mA
λ <sub>P</sub>	Peak Wavelength	----	596	----	nm	I <sub>F</sub> = 50 mA
2 Θ <sub>1/2</sub>	50% Power Angle	----	60	----	deg	I <sub>F</sub> = 50 mA

## Standard Bins (I<sub>F</sub> = 50 mA)

Lamps are sorted to luminous intensity (I<sub>V</sub>) and dominant wavelength (λ<sub>D</sub>) bins shown. Orders for OVSAABLCR8 may be filled with any or all bins contained as below.

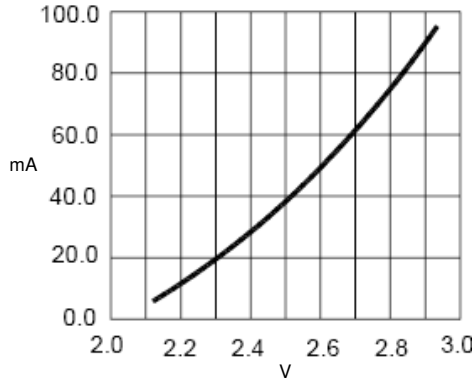


Notes:

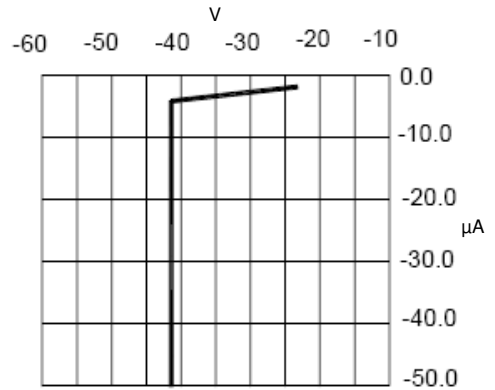
1. All ranks will be included per delivery, rank ratio will be based on the chip distribution.
2. To designate luminous intensity ranks, please contact OPTeK.

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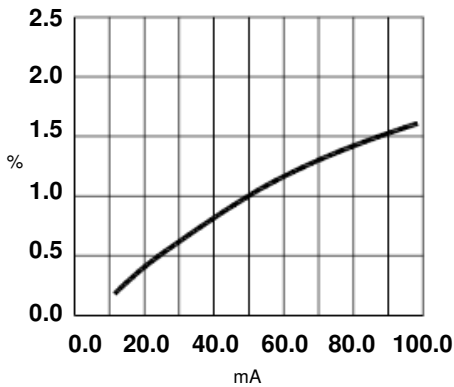
Typical Electro-Optical Characteristics Curves



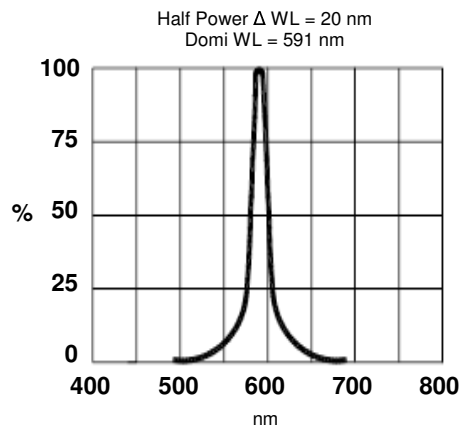
Forward Current vs Forward Voltage



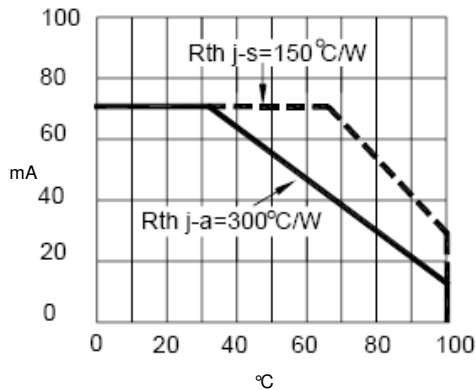
Reverse Current vs Reverse Voltage



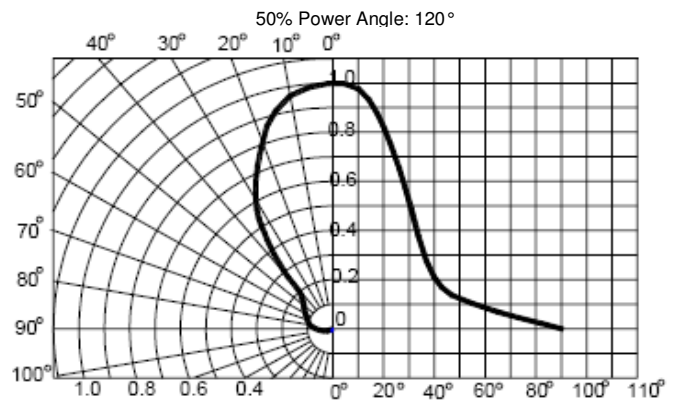
Relative Luminous Intensity vs Forward Current



Relative Luminous Flux vs Wavelength



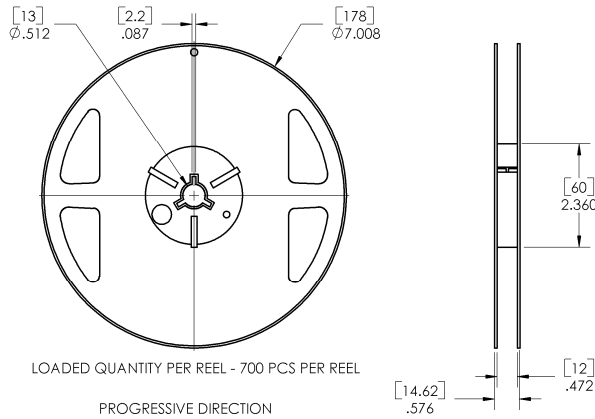
Maximum Forward DC Current vs Ambient Temperature



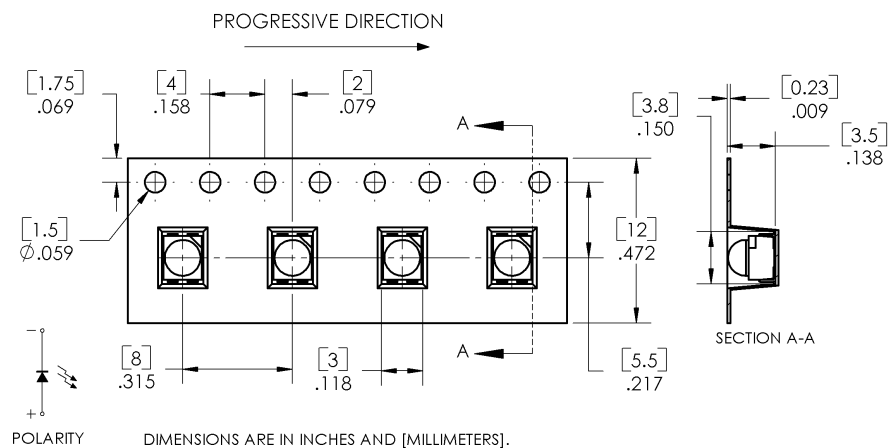
Spatial Distribution

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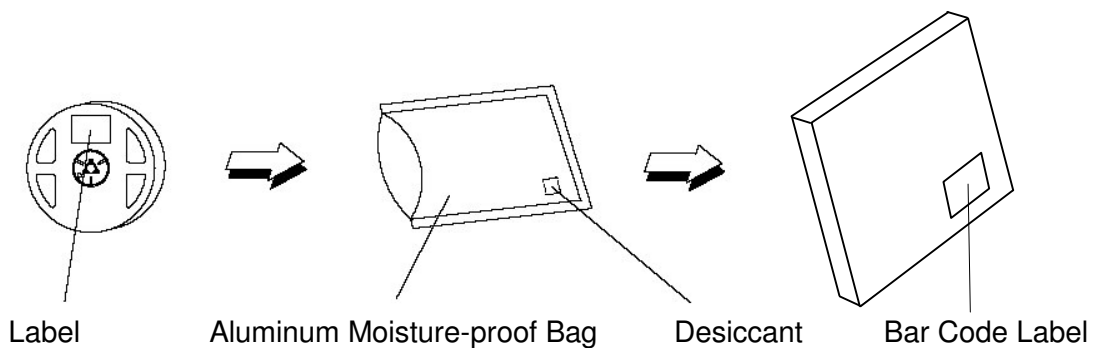
## Reel Dimensions: 7-inch reel



## Carrier Tape Dimensions: Loaded quantity 700 pieces per reel



## Moisture Resistant Packaging

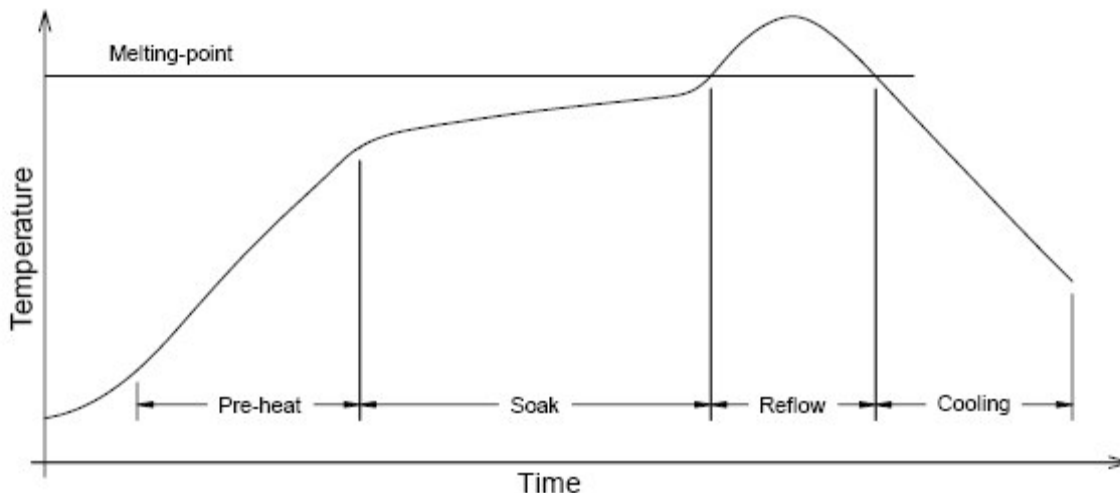


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## SMD LED Application Notes

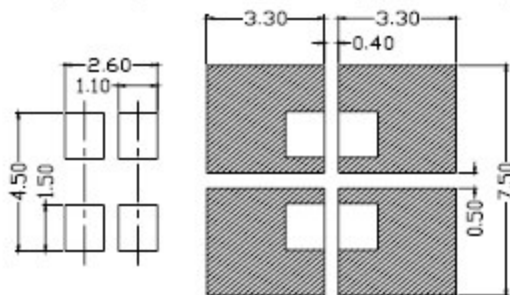
### Reflow Soldering

✦ The temperature (Top surface of SMD LED) profile is as below:



Solder = Sn63-Pb37	Solder = Lead-free
Average ramp-up rate = 4°C/s max.	Average ramp-up rate = 4°C/s max
Preheat temperature = 100°C ~150°C	Preheat temperature = 150°C ~200°C
Preheat time = 100s max.	Preheat time = 100s max.
Ramp-down rate = 6°C/s max.	Ramp-down rate = 6°C/s max.
Peak temperature = 230°C max.	Peak temperature = 250°C max.
Time within 5°C of actual Peak Temperature = 10s max.	Time within 5°C of actual Peak Temperature = 10s max.
Duration above 183°C is 80s max.	Duration above 217°C is 80s max.

✦ Recommended solder pad design for heat dissipation (4-pin SMD LED)



- ✦ Modification is not recommended on SMD LED after soldering. If modification cannot be avoided, the modifications must be pre-qualified to avoid damaging SMD LED.
- ✦ Reflow soldering should not be done more than one time.
- ✦ No stress should be exerted on the package during soldering.
- ✦ PCB should not be wrapped after soldering; this is to allow natural cooling of the PCB board and SMD LED.

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