

# Cree® 4-mm Oval LED

## Model # LO494EPG4-B0G-A3

### Data Sheet

100-degree oval LED lamp in green color with tinted, diffused lens and stopper

#### Applications

- Full-Color Display

#### Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ )

Items	Symbol	Absolute Maximum Rating	Unit
Forward Current	$I_F$	25	mA
Peak Forward Current <small>Note</small>	$I_{FP}$	100	mA
Reverse Voltage	$V_R$	5	V
Power Dissipation	$P_D$	100	mW
Operation Temperature	$T_{opr}$	-40 ~ +95	°C
Storage Temperature	$T_{stg}$	-40 ~ +100	°C
Lead Soldering Temperature	$T_{sol}$	Max. 260°C for 3 sec. max. (3 mm from the base of the epoxy bulb)	

**Note:** Pulse width  $\leq 0.1$  msec, duty  $\leq 1/10$ .

#### Typical Electrical & Optical Characteristics ( $T_A = 25^\circ\text{C}$ )

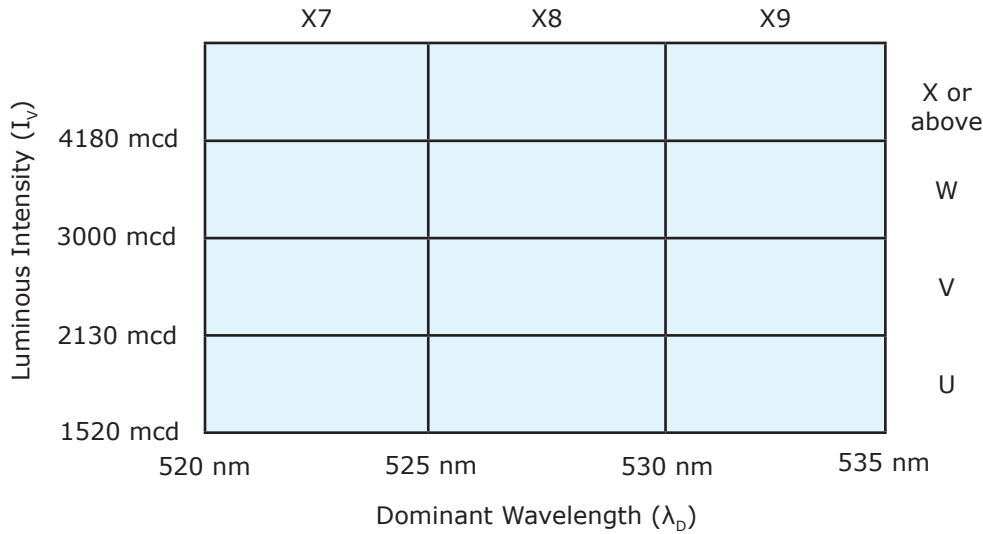
Characteristics	Symbol	Condition	Unit	Minimum	Typical	Maximum
Forward Voltage	$V_F$	$I_F = 20$ mA	V		3.4	4.0
Reverse Current	$I_R$	$V_R = 5$ V	$\mu\text{A}$			100
Dominant Wavelength	$\lambda_D$	$I_F = 20$ mA	nm	520	527	535
Luminous Intensity	$I_V$	$I_F = 20$ mA	mcd	1520	2400	
50% Power Angle	$2\theta_{1/2\text{H-H}}$	$I_F = 20$ mA	deg		105	
	$2\theta_{1/2\text{V-V}}$	$I_F = 20$ mA	deg		50	

**Standard Bins for LO494EPG4-B0G-A3 ( $I_f = 20 \text{ mA}$ )**

Lamps are sorted to luminous intensity ( $I_v$ ) and dominant wavelength ( $\lambda_D$ ) bins shown.

Orders for LO494EPG4-B0G-A3 may be filled with any or all bins contained as below.

All luminous intensity ( $I_v$ ) and dominant wavelength ( $\lambda_D$ ) values shown and specified are at  $I_f = 20 \text{ mA}$ .



**Important Notes:**

1. All ranks will be included per delivery; rank ratio will be based on the dice distribution.
2. Pb content <1000 ppm.
3. Tolerance of measurement of luminous intensity is  $\pm 15\%$ .
4. Tolerance of measurement of dominant wavelength is  $\pm 1 \text{ nm}$ .
5. Tolerance of measurement of  $V_f$  is  $\pm 0.05 \text{ V}$ .
6. Packaging methods are available for selection; please refer to the "Cree LED Lamp Packaging Standard" document.
7. Please refer to the "Cree LED Lamp Reliability Test Standards" document for reliability test conditions.
8. Please refer to the "Cree LED Lamp Soldering & Handling" document for information about how to use this LED product safely.

**Graphs**

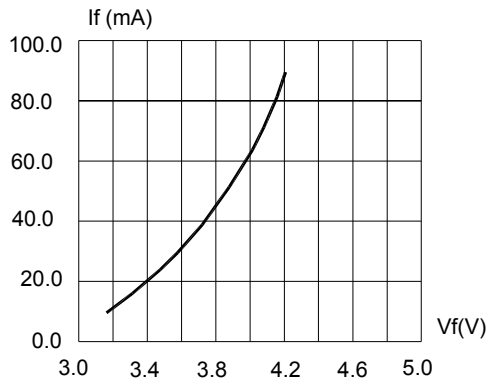


FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

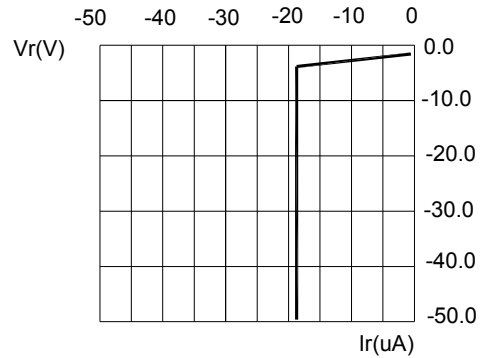


FIG.2 REVERSE CURRENT VS. REVERSE VOLTAGE.

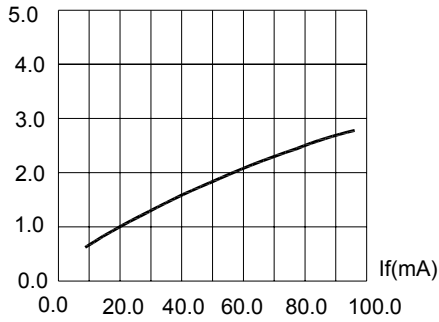


FIG.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

Half Power  $\Delta$  WL=38nm  
Domi WL= 527nm

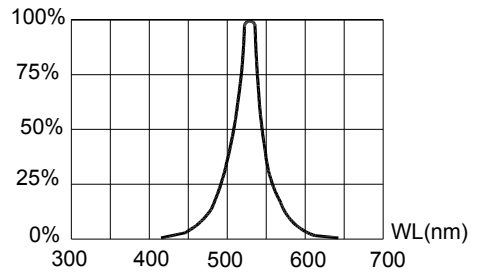


FIG.4 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH.

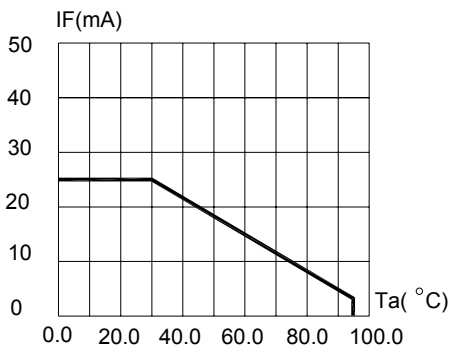


FIG.5 MAXIMUM FORWARD DC CURRENT VS AMBIENT TEMPERATURE ( $T_{jmax}=105^{\circ}$  C)

50% Power Angle : H-H :  $105^{\circ}$   
V-V :  $50^{\circ}$

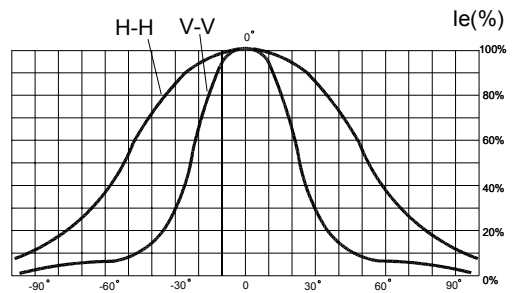


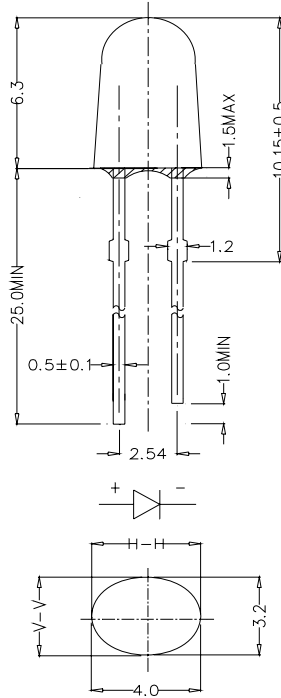
FIG.6 FAR FIELD PATTERN

## Mechanical Dimensions

All dimensions are in mm. Tolerance is  $\pm 0.25$  mm unless otherwise noted.

An epoxy meniscus may extend about 1.5 mm down the leads.

Burr around bottom of epoxy may be 0.5 mm max.



## Notes

### RoHS Compliance

The levels of environmentally sensitive, persistent biologically toxic (PBT), persistent organic pollutants (POP), or otherwise restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), as amended through April 21, 2006.

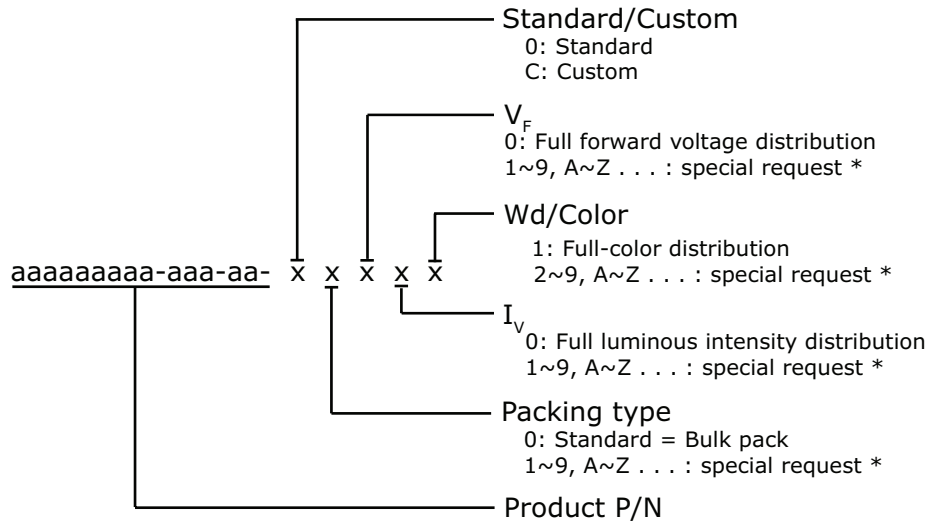
### Vision Advisory Claim

Users should be cautioned not to stare at the light of this LED product. The bright light can damage the eye.

## Kit Number System

Cree LED lamps are tested and sorted into performance bins. A bin is specified by ranges of color, forward voltage, and brightness. Sorted LEDs are packaged for shipping in various convenient options. Please refer to the "Cree LED Lamp Packaging Standard" document for more information about shipping and packaging options.

Cree LEDs are sold by order codes in combinations of bins called kits. Order codes are configured in the following manner:



\* Contact your Cree sales representative for ordering information.

## Standard Available Kits\*

Kit Number	Description
LO494EPG4-B0G-A3-00001	4mm Oval 110 Green, Full Rank, Bulk Pack
LO494EPG4-B0G-A3-00002	4mm Oval 110 Green, IV: Full Rank, Hue: X7-X8, Bulk Pack
LO494EPG4-B0G-A3-00003	4mm Oval 110 Green, IV: Full Rank, Hue: X8-X9, Bulk Pack
LO494EPG4-B0G-A3-00014	4mm Oval 110 Green, Consecutive 4Q Iv bins of min U; 1 Hue from X7 - X9, Bulk Pack
LO494EPG4-B0G-A3-00015	4mm Oval 110 Green, Consecutive 4Q Iv bins of min U; 1 Hue from X7 - X8, Bulk Pack
LO494EPG4-B0G-A3-00016	4mm Oval 110 Green, Consecutive 4Q Iv bins of min U; 1 Hue from X8 - X9, Bulk Pack
LO494EPG4-B0G-A3-00024	4mm Oval 110 Green, Consecutive 4Q Iv bins of min U3; 1 Hue from X7 - X9, Bulk Pack
LO494EPG4-B0G-A3-00025	4mm Oval 110 Green, Consecutive 4Q Iv bins of min U3; 1 Hue from X7 - X8, Bulk Pack
LO494EPG4-B0G-A3-00026	4mm Oval 110 Green, Consecutive 4Q Iv bins of min U3; 1 Hue from X8 - X9, Bulk Pack
LO494EPG4-B0G-A3-00034	4mm Oval 110 Green, Consecutive 4Q Iv bins of min V; 1 Hue from X7 - X9, Bulk Pack

\* Please contact your Cree representative about the availability of non-standard kits.