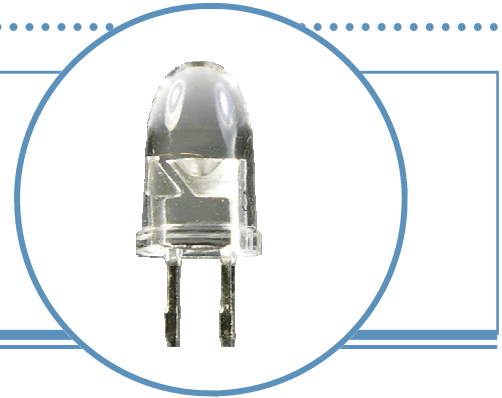


# White High-Intensity LED Lamp (5 mm, 15° Viewing Angle)

## OVLEW1CB9

- Narrow beam angle
- High luminous intensity
- Water clear plastic package
- InGaN White
- Pb-free

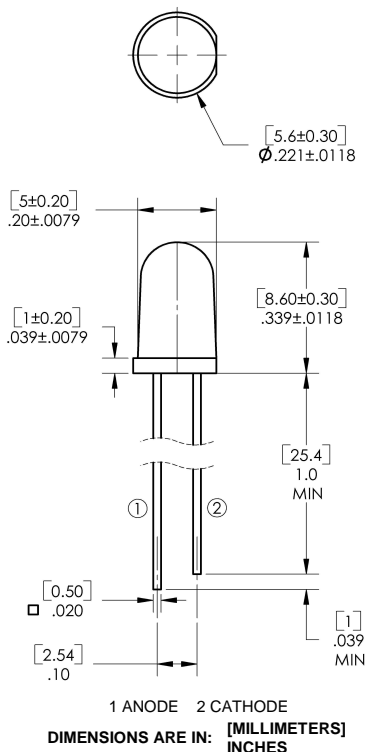


The **OVLEW1CB9** is a round 5 mm white high-intensity lamp with a 15° viewing angle. It is designed for applications that require high luminous intensity, such as indoor and outdoor displays, marker lights and optical indicators. The phosphor used in the reflector converts the blue emission of the InGaN chip to ideal white light so that the best mode of white light intensity and CIE chromaticity are achieved.

## Applications

- Indoor/outdoor displays and applications
- Message boards
- Store front signage
- Indicators

Part Number	Material	Emitted Color	Intensity Typ. mcd	Lens Color
OVLEW1CB9	InGaN	White	24000	Water Clear



**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

$T_A = 25^\circ\text{C}$

Storage Temperature Range	-40 ~ +100 °C
Operating Temperature Range	-40 ~ +95 °C
Reverse Voltage	5 V
Continuous Forward Current	25 mA
Peak Forward Current (10% Duty Cycle, 1 KHz)	100 mA
Power Dissipation	100 mW
Lead Soldering Temperature (3 mm from the base of the epoxy bulb) <sup>1</sup>	260°C
Electrostatic Discharge	150 V

Note:

- Solder time less than 3 seconds at temperature extreme.

### Electrical Characteristics

$T_A = 25^\circ\text{C}$

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
$I_V$	Luminous Intensity	16800	24000		mcd	$I_F = 20\text{ mA}$
$V_F$	Forward Voltage	----	3.2	4.0	V	$I_F = 20\text{ mA}$
$I_R$	Reverse Current	----	----	100	$\mu\text{A}$	$V_R = 5\text{ V}$
$2\theta_{1/2}$	50% Power Angle	----	15	----	deg	$I_F = 20\text{ mA}$
x	Chromaticity Coordinates	----	0.2877	----	----	$I_F = 20\text{ mA}$
y		----	0.2831	----	----	$I_F = 20\text{ mA}$

### Standard Bins ( $I_F = 20\text{ mA}$ )

Lamps are sorted to luminous intensity ( $I_V$ ) and chromaticity coordinates (x, y) bins shown.

Orders for OVLEW1CB9 may be filled with any or all bins contained as below.

Luminous Intensity (mcd)	Rank																	
	A11	A12	A13	A14	A21	A22	A23	A24	B11	B12	B13	B14	B21	B22	B23	B24		
32900																		Z3b
28200																		Z3a
23500																		Z2b
20150																		Z2a
16800																		

Luminous Intensity is at Z2a bin or above.

#### Forward Voltage (VF)

Rank	V7	V8	V9	V10	V11	V12
Voltage	2.8-3.0V	3.0-3.2V	3.2-3.4V	3.4-3.6V	3.6-3.8V	3.8-4.0V

Notes:

- All ranks will be included per delivery, rank ratio will be based on the chip distribution.
- Pb content <1000 PPM.
- To designate luminous intensity ranks, please contact OPTEK.

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### Chromaticity Coordinates (x, y)

Rank		A11				A12				A13			
Chromaticity Coordinates	x	0.2450	0.2545	0.2633	0.2545	0.2633	0.2720	0.2640	0.2545	0.2545	0.2640	0.2720	0.2633
	y	0.2290	0.2480	0.2410	0.2245	0.2410	0.2340	0.2200	0.2245	0.2480	0.2670	0.2575	0.2410

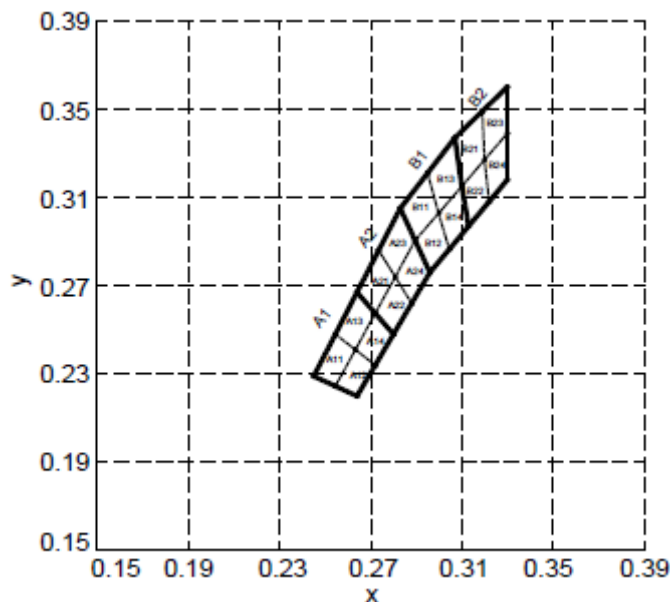
Rank		A14				A21				A22			
Chromaticity Coordinates	x	0.2633	0.2720	0.2800	0.2720	0.2640	0.2735	0.2808	0.2720	0.2720	0.2808	0.2880	0.2800
	y	0.2410	0.2575	0.2480	0.2340	0.2670	0.2860	0.2740	0.2575	0.2575	0.2740	0.2620	0.2480

Rank		A23				A24				B11			
Chromaticity Coordinates	x	0.2735	0.2830	0.2895	0.2808	0.2808	0.2895	0.2960	0.2880	0.2830	0.2950	0.2998	0.2895
	y	0.2860	0.3050	0.2905	0.2740	0.2740	0.2905	0.2760	0.2620	0.3050	0.3210	0.3028	0.2905

Rank		B12				B13				B14			
Chromaticity Coordinates	x	0.2895	0.2998	0.3045	0.2960	0.2950	0.3070	0.3100	0.300	0.3000	0.3100	0.3130	0.3050
	y	0.2905	0.3028	0.2865	0.2760	0.3210	0.3370	0.3150	0.3030	0.3030	0.3150	0.2970	0.2870

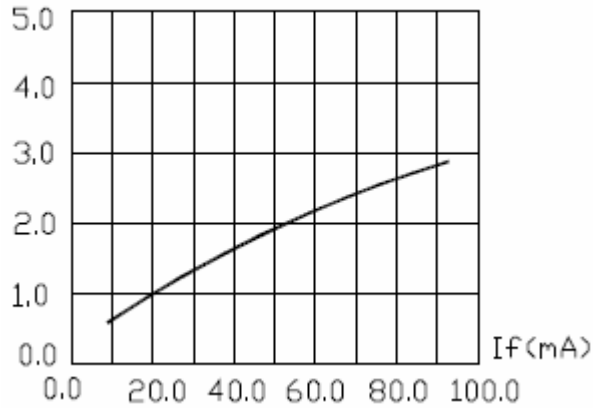
Rank		B21				B22				B23			
Chromaticity Coordinates	x	0.3070	0.3190	0.3200	0.3100	0.3100	0.3200	0.3220	0.3130	0.3190	0.3300	0.3300	0.3200
	y	0.3370	0.3490	0.3270	0.3150	0.3150	0.3270	0.3080	0.2970	0.3490	0.3600	0.3390	0.3270

Rank		B24			
Chromaticity Coordinates	x	0.3200	0.3300	0.3300	0.3220
	y	0.3270	0.3390	0.3180	0.3080

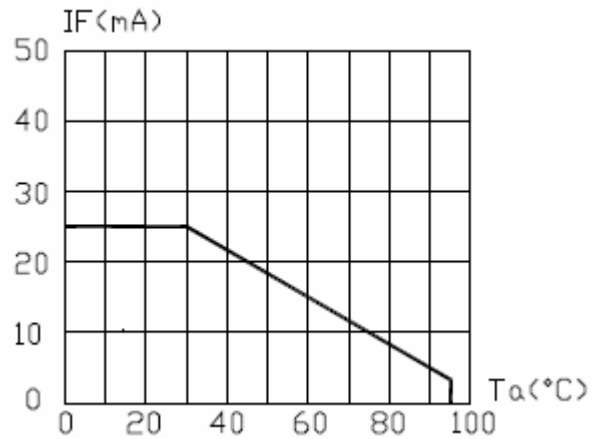


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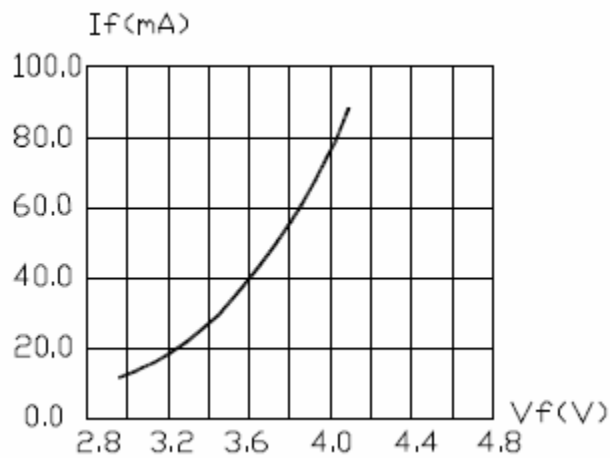
Typical Electro-Optical Characteristics Curves



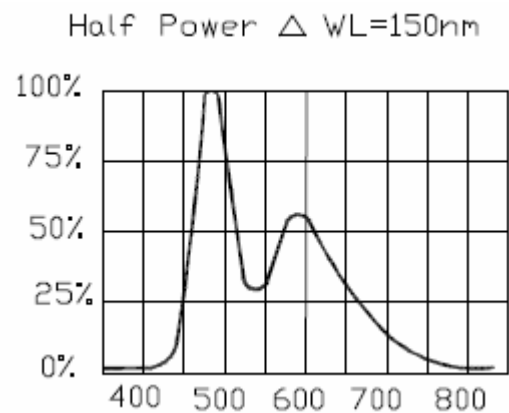
Relative Luminous Intensity vs Forward Current



Maximum Forward Current vs Ambient Temperature

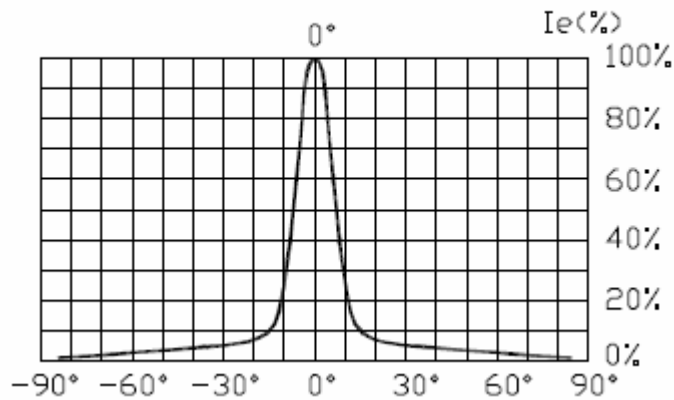


Forward Current vs Forward Voltage

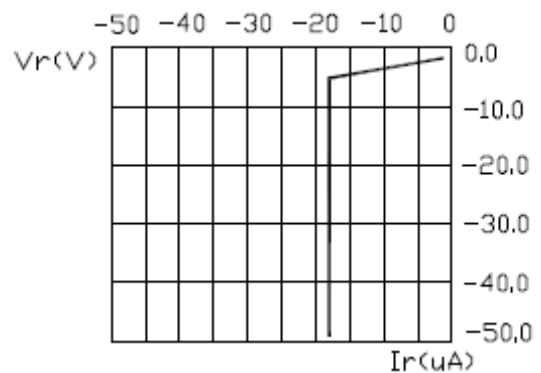


Relative Luminous Intensity vs. Wavelength

50% Power Angle: 15°



Far Field Pattern



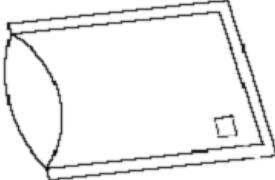
Reverse Current vs. Reverse Voltage

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Packing Information: 500 pieces per bag



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